

Access DB# 94663**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Camel S. Thompson Examiner #: 79244 Date: 5/21/03
Art Unit: 1774 Phone Number 30 54488 Serial Number: 09/995,816
Mail Box and Bldg/Room Location: CP3 11B29 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: organic polymer electroluminescent device
Inventors (please provide full names): O-OK Park; Tae-Noo Lee

Earliest Priority Filing Date: 3/30/2000

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please do a search + CAS search for claims 1-19.

*Please do a CAS search on
formulas III + IV in claim 11
and
formula I + II in claim 13*

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STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>Kiana Bon</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/>
Searcher Phone #: <u>305 832</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: <u>626 1700</u>	Structure (#) <input checked="" type="checkbox"/>	Questel/Orbit _____
Date Searcher Picked Up: <u>5/22/03</u>	Bibliographic <input checked="" type="checkbox"/>	Dr. Link _____
Date Completed: <u>5/23/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>45 min</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>180 min</u>	Other _____	Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number: 94663

TO: Camie Thompson

Location: CP3 11B28

Art Unit : 1774

May 29, 2003

Case Serial Number: 09995816

From: Barba Koroma

Location: EIC 1700

CP3/4-3D62

Phone: 305-3542

barba.koroma@uspto.gov

Search Notes

Attached herewith is the result set of the search requested. Please let me know if you have any questions.
Thanks.



EIC 1700 / LUTRELLE F. PARKER LAW LIBRARY

Scientific and Technical Information Center



Search Results Feedback Form

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact the searcher whose name is circled below.

Kathleen Fuller 308-4290

John Calve 308-4139

Barba Koroma 305-3542

Eric Linnell 308-4143

All searchers are located in the library in CP3/4 3D62

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:

Example:

➤ Relevant prior art found, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art not found:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62 .

=> file reg

FILE 'REGISTRY' ENTERED AT 13:35:13 ON 29 MAY 2003

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 28 MAY 2003 HIGHEST RN 521913-14-4

DICTIONARY FILE UPDATES: 28 MAY 2003 HIGHEST RN 521913-14-4

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STN Note 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> file caplus

FILE 'CAPLUS' ENTERED AT 13:35:16 ON 29 MAY 2003

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FILE COVERS 1907 - 29 May 2003 VOL 138 ISS 22

FILE LAST UPDATED: 28 May 2003 (20030528/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 147

L1 780761 SEA FILE=CAPLUS ABB=ON PLU=ON TRANSPAREN?(4A) SUBSTRATE OR GLASS OR QUARTZ

L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25038-59-9/RN

KOROMA EIC1700

L3 61018 SEA FILE=CAPLUS ABB=ON PLU=ON L2
L4 833802 SEA FILE=CAPLUS ABB=ON PLU=ON L1 OR L3
L5 9050 SEA FILE=CAPLUS ABB=ON PLU=ON TRANSPAREN? (4A) ELECTRODE
L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON 1335-25-7
L7 1 SEA FILE=REGISTRY ABB=ON PLU=ON 50926-11-9
L8 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25233-30-1
L9 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25233-34-5
L10 1 SEA FILE=REGISTRY ABB=ON PLU=ON 126213-51-2
L11 1 SEA FILE=REGISTRY ABB=ON PLU=ON 30604-81-0
L12 6 SEA FILE=REGISTRY ABB=ON PLU=ON (L6 OR L7 OR L8 OR L9 OR L10 OR L11)
L13 32015 SEA FILE=CAPLUS ABB=ON PLU=ON L12
L14 39507 SEA FILE=CAPLUS ABB=ON PLU=ON L5 OR L13
L15 14 SEA FILE=REGISTRY ABB=ON PLU=ON 7439-92-1 OR 7440-57-5 OR 7429-90-5 OR 7439-95-4 OR 7439-93-2 OR 7440-70-2 OR 7440-50-8 OR 7440-22-4 OR 7439-89-6 OR 7440-06-4 OR 7440-74-6 OR 7440-05-3 OR 7440-33-7 OR 7440-66-6
L16 1704529 SEA FILE=CAPLUS ABB=ON PLU=ON L15
L18 1 SEA FILE=REGISTRY ABB=ON PLU=ON 79-41-4
L19 276701 SEA FILE=REGISTRY ABB=ON PLU=ON PACR/PCT
L20 105058 SEA FILE=REGISTRY ABB=ON PLU=ON PSTY/PCT
L21 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25067-59-8
L22 17730 SEA FILE=CAPLUS ABB=ON PLU=ON L18
L23 362739 SEA FILE=CAPLUS ABB=ON PLU=ON L19
L24 261428 SEA FILE=CAPLUS ABB=ON PLU=ON L20
L25 4480 SEA FILE=CAPLUS ABB=ON PLU=ON L21
L26 516915 SEA FILE=CAPLUS ABB=ON PLU=ON (L22 OR L23 OR L24 OR L25)
L27 8 SEA FILE=REGISTRY ABB=ON PLU=ON 26009-24-5 OR 25190-62-9 OR 25233-34-5 OR 95270-88-5 OR 30604-81-0 OR 25067-58-7 OR 25233-30-1 OR 91-22-5
L28 31727 SEA FILE=CAPLUS ABB=ON PLU=ON L27
L29 9 SEA FILE=REGISTRY ABB=ON PLU=ON 106-51-4 OR 1344-28-1 OR 517-51-1 OR 120-12-7 OR 198-55-0 OR 38215-36-0 OR 7385-67-3 OR 65181-78-4 OR 51325-91-8
L30 247011 SEA FILE=CAPLUS ABB=ON PLU=ON L29
L33 22012 SEA FILE=REGISTRY ABB=ON PLU=ON 75-21-8/CRN
L34 18077 SEA FILE=REGISTRY ABB=ON PLU=ON 75-56-9/CRN
L35 38487 SEA FILE=CAPLUS ABB=ON PLU=ON L33
L36 40916 SEA FILE=CAPLUS ABB=ON PLU=ON L34
L37 51500 SEA FILE=CAPLUS ABB=ON PLU=ON L35 OR L36
L39 74328 SEA FILE=CAPLUS ABB=ON PLU=ON ELECTRON(L) INJECT? OR ((SINGLE OR MONO OR ONE) (3A) CATION(L) CONDUCT?) OR L37
L40 61018 SEA FILE=CAPLUS ABB=ON PLU=ON HOLE(L) INJECT? OR ((SINGLE OR MONO OR ONE) (3A) ANION(L) CONDUCT?) OR L37
L41 220 SEA FILE=CAPLUS ABB=ON PLU=ON L4 AND (L14 OR L16) AND (L26 OR L28 OR L30) AND L40 AND L39
L44 85 SEA FILE=CAPLUS ABB=ON PLU=ON L41 AND (EL OR ELECTROLUMINE? OR LUMINES?) AND (DEVICE OR DEV/RL)
L45 75 SEA FILE=CAPLUS ABB=ON PLU=ON L44 AND LAYER?
L46 67 SEA FILE=CAPLUS ABB=ON PLU=ON L41 AND ORGANIC(L) (EL OR ELECTROLUMINE? OR LUMINES?) AND (DEVICE OR DEV/RL)
L47 58 SEA FILE=CAPLUS ABB=ON PLU=ON L45 AND L46

=> d ibib abs ind hitstr total 147

L47 ANSWER 1 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:261146 CAPLUS

DOCUMENT NUMBER: 138:278135

TITLE: **Organic electroluminescent devices and manufacture and electronic devices**

INVENTOR(S): Kobayashi, Hidekazu

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003100455	A2	20030404	JP 2001-294708	20010926
PRIORITY APPLN. INFO.:			JP 2001-294708	20010926

AB The **devices** comprise: a **glass** substrate; a TFT circuit **layer**; an insulator **layer**; an anode matrix; a dielec. partition; a **hole injection** matrix; a red, a green and a blue phosphor matrix; an **electron injection** on the blue phosphor array; a red, a blue and a green **injection** electrodes; an epoxy resin encapsulation; and a sealing **glass** cover. The electronic **devices** employ the **org. electroluminescent devices**.

IC ICM H05B033-10
ICS H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent device structure**

IT Cameras
(digital; **org. electroluminescent devices** and manuf.)

IT Charge coupled **devices**
Color
Electric insulators
Electroluminescent devices
Electrooptical effect
Encapsulation
Glass substrates
Phosphors
Thin film transistors
(**org. electroluminescent devices** and manuf.)

IT Epoxy resins, uses
Sealing **glass**

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses
7789-24-4, Lithium fluoride (LiF), uses 123864-00-6 138184-36-8,
MEH-PPV 155090-83-8, Baytron P

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses
155090-83-8, Baytron P

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7440-70-2 CAPLUS

CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 155090-83-8 CAPLUS

CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with
2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2

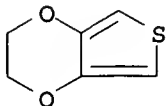
CMF (C6 H6 O2 S)x

CCI PMS

CM 2

CRN 126213-50-1

CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1-CH=CH₂

D1-SO₃H

L47 ANSWER 2 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:963853 CAPLUS

DOCUMENT NUMBER: 138:46950

TITLE: **Organic electroluminescent devices**

INVENTOR(S): Watanabe, Keisuke; Arai, Michio

PATENT ASSIGNEE(S): TDK Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002367784	A2	20021220	JP 2001-176037	20010611
PRIORITY APPLN. INFO.:			JP 2001-176037	20010611

AB The **devices** comprise: a **glass** substrate; an ITO electrode; a **hole injecting**, a **hole** transporting, a phosphor, an **electron** transporting, an inorg. **electron injecting** and a metal electrode, where the **electron injecting layer** comprises a molybdenum oxide and a metal or a metal oxide having a work function < 3 eV.

IC ICM H05B033-22

ICS H05B033-22; H05B033-14

KOROMA EIC1700

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device

IT Electroluminescent devices
Glass substrates
Phosphors
Work function
(org. electroluminescent devices)

IT 1310-53-8, Germanium oxide (GeO2), uses 1312-43-2, Indium oxide (In2O3)
1313-27-5, Molybdenum oxide (MoO3), uses 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 7440-46-2, Cesium, uses 11098-99-0, Molybdenum oxide 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD 123847-85-8, .alpha.-NPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

IT 91-64-5, Coumarin 517-51-1, Rubrene
RL: MOA (Modifier or additive use); USES (Uses)
(org. electroluminescent devices)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

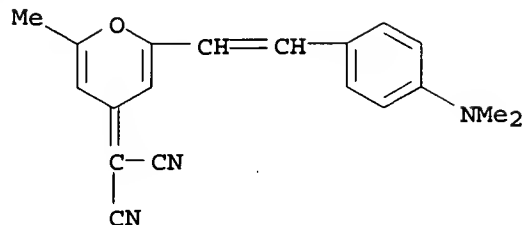
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

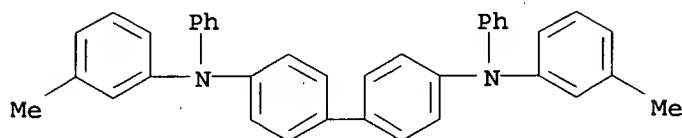
RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

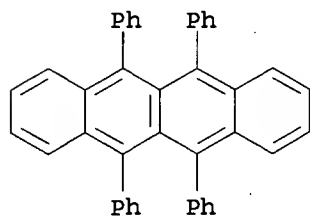


IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)
(org. electroluminescent devices)

RN 517-51-1 CAPLUS

CN Naphthalene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 3 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:573584 CAPLUS

DOCUMENT NUMBER: 137:132235

TITLE: Color filter substrate employing color changing method
(CCM) material and organic EL
color display using the same

INVENTOR(S): Kawamura, Yukinori; Kawaguchi, Takeshi; Shiraishi,
Yotaro

PATENT ASSIGNEE(S): Fuji Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

KOROMA EIC1700

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002216962	A2	20020802	JP 2001-9221	20010117
PRIORITY APPLN. INFO.:			JP 2001-9221	20010117

AB The color filter **substrate** consists of a **transparent** support (A), .gtoreq.1 color changing filter **layer** (B) on A, having patterns of matrix resin films contg. phosphors, and gas-barrier **layer** (C) covering B, wherein B contain .gtoreq.1 dispersed phases of additives having refractive indexes different from that of the matrix resin to suppress decompn. or degrdn. of the phosphors on driving an **org. EL device**. The additives may be **org. compd. fine particles** or **inorg. compd. fine particles**. The **org. EL color display** involves the color filter **substrate**, .gtoreq.1 **transparent electrode layers**, a **luminescent layer**, and a 2nd electrode **layer** laminated in this order.

IC ICM H05B033-12
ICS H05B033-04; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **org electroluminescent device** color filter additive; phosphor degrdn prevention color filter additive; silica color filter phosphor degrdn prevention; color changing method color filter additive

IT Epoxy resins, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(acrylates, cured, gas-barrier **layer** for color filter; **org. EL display** with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT Optical filters
(**org. EL display** with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT **Electroluminescent devices**
(**org.**; **org. EL display** with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 337912-40-OP, V 259PA-P5
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(CCM material binder; **org. EL display** with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Mg/Ag, 2nd electrode; **org. EL display** with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(additives; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 50926-11-9, ITO
RL: TEM (Technical or engineered material use); USES (Uses)
(electrode; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 2085-33-8, Tris-(8-hydroxyquinoline)aluminum
RL: TEM (Technical or engineered material use); USES (Uses)
(**electron injecting layer**; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 109371-84-8, Silicon nitride (SiO-1N0-1)
RL: TEM (Technical or engineered material use); USES (Uses)
(gas-barrier **layer** for color filter; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 147-14-8, Copper phthalocyanine
RL: TEM (Technical or engineered material use); USES (Uses)
(**hole injection layer**; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl
RL: TEM (Technical or engineered material use); USES (Uses)
(hole transporting **layer**; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 142289-08-5, 4,4'-Bis(2,2-diphenylvinyl)biphenyl
RL: TEM (Technical or engineered material use); USES (Uses)
(**luminescent layer**; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 989-38-8, Rhodamin 6G 2390-63-8, Basic Violet 11 38215-36-0, Coumarin 6
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphor; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Mg/Ag, 2nd electrode; **org.** EL display with color filter substrate employing color changing method (CCM) material and contg. additives for prevention of phosphor degrdn.)

RN 7439-95-4 CAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

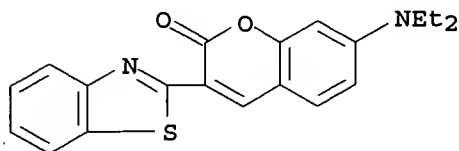
RN 7440-22-4 CAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

IT 50926-11-9, ITO
RL: TEM (Technical or engineered material use); USES (Uses)
(electrode; **org.** EL display with color filter
substrate employing color changing method (CCM) material and contg.
additives for prevention of phosphor degrdn.)
RN 50926-11-9 CAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 38215-36-0, Coumarin 6
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphor; **org.** EL display with color filter
substrate employing color changing method (CCM) material and contg.
additives for prevention of phosphor degrdn.)
RN 38215-36-0 CAPLUS
CN 2H-1-Benzopyran-2-one, 3-(2-benzothiazolyl)-7-(diethylamino)- (9CI) (CA
INDEX NAME)



L47 ANSWER 4 OF 58 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:447327 CAPLUS
DOCUMENT NUMBER: 137:12994
TITLE: **Organic electroluminescent
devices and manufacture**
INVENTOR(S): Mishima, Masayuki; Fujimura, Hidetoshi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

KOROMA EIC1700

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002170677	A2	20020614	JP 2000-364649	20001130
PRIORITY APPLN. INFO.:			JP 2000-364649	20001130

AB The devices comprise: a glass substrate; and an ITO electrode, a hole-injection, a hole transport, a phosphor, an electron transport and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. no oxygen.

IC ICM H05B033-14
 ICS H05B033-10

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device manuf

IT Atmosphere (environmental)
 Electroluminescent devices
 Electron transport
 Glass substrates
 Hole transport
 (org. electroluminescent devices and manuf.)

IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO 94928-86-6, Tris(2-phenyl pyridine)iridium 358974-66-0, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices and manuf.)

IT 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (org. electroluminescent devices and manuf.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices and manuf.)

RN 7439-95-4 CAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-22-4 CAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

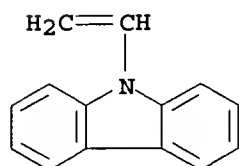
Ag

RN 25067-59-8 CAPLUS
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

CMF C14 H11 N



RN 50926-11-9 CAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 5 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:447326 CAPLUS

DOCUMENT NUMBER: 137:12993

TITLE: **Organic electroluminescent devices and manufacture**

INVENTOR(S): Mishima, Masayuki

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002170676	A2	20020614	JP 2000-370149	20001205
PRIORITY APPLN. INFO.:			JP 2000-370149	20001205

KOROMA EIC1700

AB The devices comprise: a glass substrate; and an ITO electrode, a hole-injection, a hole transport, a phosphor, an electron transport, an electron injection and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. oxygen < 100 ppm.

IC ICM H05B033-14

ICS C09K011-06; H05B033-10

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device manuf

IT Atmosphere (environmental)

Electroluminescent devices

Electron transport

Glass substrates

Hole transport

(Org. electroluminescent devices and manuf.)

IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 94928-86-6, Tris(2-phenyl pyridine)iridium 358974-66-0, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

RL: DEV (Device component use); USES (Uses)

(Org. electroluminescent devices and manuf.)

IT 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(Org. electroluminescent devices and manuf.)

IT 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices and manuf.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole

RL: DEV (Device component use); USES (Uses)

(Org. electroluminescent devices and manuf.)

RN 7439-95-4 CAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-22-4 CAPLUS

CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 25067-59-8 CAPLUS

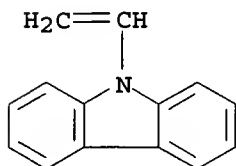
KOROMA EIC1700

CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

CMF C14 H11 N



IT 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 6 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:447323 CAPLUS

DOCUMENT NUMBER: 137:12990

TITLE: Organic electroluminescent
devices and manufacture

INVENTOR(S): Mishima, Masayuki

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002170672	A2	20020614	JP 2000-370151	20001205
US 2002125819	A1	20020912	US 2001-323	20011204
CN 1358054	A	20020710	CN 2001-140319	20011205

PRIORITY APPLN. INFO.: JP 2000-370151 A 20001205

AB The devices comprise: a glass substrate; and an ITO
electrode, a hole-injection, a hole

transport, a phosphor, an electron transport and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. H₂O < 100 ppm and oxygen < 100 ppm.

IC ICM H05B033-10

ICS C09K011-06; H05B033-04; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device manuf

IT Atmosphere (environmental)

Electroluminescent devices

Electron transport

Glass substrates

Hole transport

(org. electroluminescent devices and manuf.)

IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4,

Silver, uses 25067-59-8, Polyvinyl carbazole 50926-11-9

, ITO 94928-86-6, Tris(2-phenyl pyridine)iridium 358974-66-0, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices and manuf.)

IT 7732-18-5, Water, reactions 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(org. electroluminescent devices and manuf.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses

25067-59-8, Polyvinyl carbazole 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices and manuf.)

RN 7439-95-4 CAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-22-4 CAPLUS

CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 25067-59-8 CAPLUS

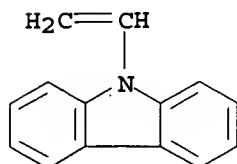
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

KOROMA EIC1700

CMF C14 H11 N



RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 7 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:314562 CAPLUS

DOCUMENT NUMBER: 136:332527

TITLE: Manufacture of **organic electroluminescent** apparatus

INVENTOR(S): Kobayashi, Hidekazu

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002124376	A2	20020426	JP 2001-244852	20010810
US 2002057052	A1	20020516	US 2001-925324	20010810
PRIORITY APPLN. INFO.:			JP 2000-244589	A 20000811
			JP 2001-244852	A 20010810

AB The manufg. process comprises the steps of: forming on (1) a **glass** substrate (2) an ITO 1st electrode stripe array (.dblvert. X); forming (3) a **hole injection** and (4) a **hole transporting layer**; forming (5) a red, a green and a blue phosphor matrix by an ink jet method; (6) a LiF **electron transporting layer**; forming (7) a 2nd electrode stripe array (.dblvert. Y); and forming a TFT driver matrix.

IC ICM H05B033-06

ICS G09F009-30; H05B033-10; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

KOROMA EIC1700

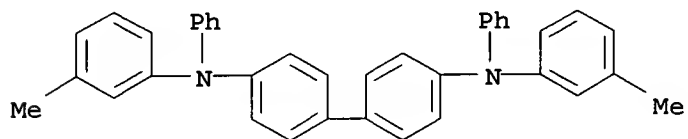
ST manuf org electroluminescent device
 IT Computers
 Electroluminescent devices
 Glass substrates
 Optical imaging devices
 Phosphors
 Plasma
 Thin film transistors
 (manuf. of org. electroluminescent app.)
 IT Epoxy resins, uses
 RL: DEV (Device component use); USES (Uses)
 (manuf. of org. electroluminescent app.)
 IT 2085-33-8, Tris(8-quinolinolato)aluminum 7440-22-4, Silver, uses
 50926-11-9, ITO 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (manuf. of org. electroluminescent app.)
 IT 7440-22-4, Silver, uses 50926-11-9, ITO
 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (manuf. of org. electroluminescent app.)
 RN 7440-22-4 CAPLUS
 CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



L47 ANSWER 8 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2002:313479 CAPLUS

KOROMA EIC1700

DOCUMENT NUMBER: 136:332522
 TITLE: Manufacture of **organic electroluminescent** apparatus
 INVENTOR(S): Kobayashi, Hidekazu
 PATENT ASSIGNEE(S): Seiko Epson Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002124381	A2	20020426	JP 2001-244851	20010810
US 2002057051	A1	20020516	US 2001-925320	20010810
PRIORITY APPLN. INFO.:			JP 2000-244591	A 20000811
			JP 2001-244851	A 20010810

AB The manufg. process comprises the steps of: forming on (1) a **glass** substrate (2) an ITO 1st electrode stripe array (.dblvert. X); forming (3) a **hole injection** and (4) a **hole transporting layer**; treating (3) and (4) using a CF4 plasma gas; forming (5) a red, a green and a blue phosphor matrix; (6) a LiF **electron transporting layer**; forming (7) an Al/Li 2nd electrode stripe array (.dblvert. Y); and forming a TFT driver matrix.

IC ICM H05B033-10

ICS H05B033-12; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST manuf **org electroluminescent device**

IT Charge coupled devices

Electroluminescent devices

Glass substrates

Phosphors

Plasma

Thin film transistors

(manuf. of **org. electroluminescent app.**)

IT Epoxy resins, uses

RL: DEV (Device component use); USES (Uses)

(manuf. of **org. electroluminescent app.**)

IT 75-73-0, Tetrafluoromethane 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-70-2, Calcium, uses 7789-24-4, Lithium fluoride (LiF), uses 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)

(manuf. of **org. electroluminescent app.**)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-70-2, Calcium, uses 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)

(manuf. of **org. electroluminescent app.**)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

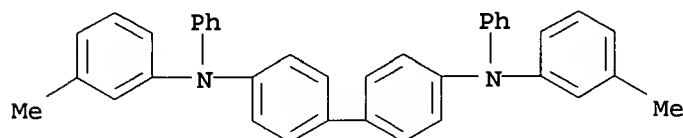
RN 7439-93-2 CAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7440-70-2 CAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 65181-78-4 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 9 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:216393 CAPLUS

DOCUMENT NUMBER: 136:254316

TITLE: **Organic electroluminescence display devices**

INVENTOR(S): Inokuchi, Daisuke; Kai, Teruhiko

PATENT ASSIGNEE(S): Toppan Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002083690	A2	20020322	JP 2000-269980	20000906
PRIORITY APPLN. INFO.:			JP 2000-269980	20000906

AB The **devices** comprise: a **glass** substrate; an auxiliary electrode having a light-transmitting **hole** array; a **hole**

injecting electrode; a hole transporting, a phosphor, an electron transporting layer; an electron injecting electrode; and a glass encapsulating cover having a drying agent. Lowering the elec. resistance of the hole fill electrode, it offers the org. EL display device which improves the uniformity of radiation. In addn., the luminous aspect easily offers the org. EL display device which is done with the auxiliary electrode. Hole fill electrode with 4 and translucent insulated substrate 1, at least the optical transmitted hole it possesses the elec. conducting layer 2 which combines 3 and the auxiliary electrode at least hole fill electrode 4, org. luminous layer 5, in the org. electro- luminescence display device which laminates electronic fill electrode 6, in this order on translucent insulated substrate 1.

IC ICM H05B033-26
ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescence display

IT Electrodes
(auxiliary; org. electroluminescence display devices)

IT Electric resistance
Electroluminescent devices
Glass substrates
Laminated materials
Luminescence
Optical imaging devices
(org. electroluminescence display devices)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 37271-44-6 50926-11-9, ITO 65181-78-4, TPD 123847-85-8, [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl-
RL: DEV (Device component use); USES (Uses)
(org. electroluminescence display devices)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescence display devices)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

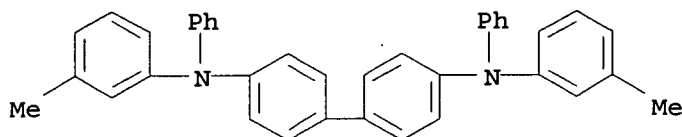
Al

RN 50926-11-9 CAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:933918 CAPLUS

DOCUMENT NUMBER: 136:61265

TITLE: **Organic electroluminescent devices**

INVENTOR(S): Imanishi, Yasuo

PATENT ASSIGNEE(S): Hitachi Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
JP 2001357972	A2	20011226	JP 2000-182305	20000613
PRIORITY APPLN. INFO.:			JP 2000-182305	20000613

AB The **devices** comprise: a **glass** substrate; an ITO 1st electrode; a **hole injecting**, a phosphor, an **electron-injecting** and a 2nd electrode **layer**; and a pair of permanent magnets.

IC ICM H05B033-02

ICS H01L033-00; H05B033-14; H05B033-22; H05B033-26

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent magnet device**

IT Electric charge

Electron-hole recombination

Exciton

Glass substrates

Luminescent substances

Magnetic field effects

Phosphors

(org. elec. field luminous component)

IT Acrylic polymers, uses

RL: DEV (Device component use); USES (Uses)

(org. elec. field luminous component)

IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride (LiF),

uses 9011-14-7, Polymethylmethacrylate 25067-59-8,

Polyvinylcarbazole 50926-11-9, ITO 104934-51-2,

Poly(3-octylthiophene)

RL: DEV (Device component use); USES (Uses)

(org. elec. field luminous component)

IT 7429-90-5, Aluminum, uses 9011-14-7,

Polymethylmethacrylate 25067-59-8, Polyvinylcarbazole

50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)

(org. elec. field luminous component)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

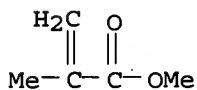
RN 9011-14-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



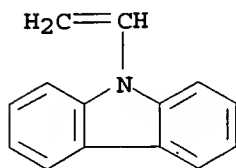
RN 25067-59-8 CAPLUS

CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

CMF C14 H11 N



RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 11 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:763394 CAPLUS
 DOCUMENT NUMBER: 135:310708
 TITLE: **Organic/polymer electroluminescent device** employing single-ion conductor
 INVENTOR(S): Park, O-Ok; Lee, Tae-Woo
 PATENT ASSIGNEE(S): Korea Advanced Institute of Science and Technology, S. Korea
 SOURCE: PCT Int. Appl., 20 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2001078464	A1	20011018	WO 2001-KR535	20010330
W: DE, JP, KR, US				
DE 20191386	T	20020620	DE 2001-10191386	20010330
US 2002037432	A1	20020328	US 2001-995816	20011127
PRIORITY APPLN. INFO.:			KR 2000-16456	A 20000330
			WO 2001-KR535	W 20010330

AB **Org./polymer electroluminescent devices** comprising a **transparent substrate**; a semitransparent **electrode** deposited on the **transparent substrate**; a **hole-injecting layer** positioned on the semitransparent electrode; an **emissive layer** made of an **org. electroluminescent material** positioned on the **hole-injecting layer**; an **electron-injecting layer** positioned on the **emissive layer**; and a metal electrode deposited on the **electron-injecting layer** are described in which single-ion

conductors are employed for the **hole-injecting layer** and the **electron-injecting layer**

- IC ICM H05B033-14
- ICS H05B033-20
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
- ST **org polymer electroluminescent device single ion conductor**
- IT **Electroluminescent devices**
Ionic conductors
(**org./polymer electroluminescent devices** employing single-ion conductors)
- IT Optical **glass**
Poly(arylenealkenylenes)
Polyacetylenes, uses
Polyanilines
Polyesters, uses
Polyquinolines
RL: DEV (Device component use); USES (Uses)
(**org./polymer electroluminescent devices** employing single-ion conductors)
- IT Ionic conductors
(polymeric; **org./polymer electroluminescent devices** employing single-ion conductors)
- IT Aluminum alloy, nonbase
Calcium alloy, nonbase
Copper alloy, nonbase
Gold alloy, nonbase
Indium alloy, nonbase
Iron alloy, nonbase
Lead alloy, nonbase
Lithium alloy, nonbase
Magnesium alloy, nonbase
Palladium alloy, nonbase
Platinum alloy, nonbase
Silver alloy, nonbase
Tungsten alloy, nonbase
Zinc alloy, nonbase
RL: DEV (Device component use); USES (Uses)
(**org./polymer electroluminescent devices** employing single-ion conductors)
- IT 120-12-7, Anthracene, uses 198-55-0, Perylene
517-51-1, Rubrene 1335-25-7, Lead oxide 2085-33-8,
Tris(8-hydroxyquinolinato)aluminum 7385-67-3, Nile red
7429-90-5, Aluminum, uses 7439-89-6, Iron, uses
7439-92-1, Lead, uses 7439-93-2, Lithium, uses
7439-95-4, Magnesium, uses 7440-05-3, Palladium, uses
7440-06-4, Platinum, uses 7440-22-4, Silver, uses
7440-33-7, Tungsten, uses 7440-50-8, Copper, uses
7440-57-5, Gold, uses 7440-66-6, Zinc, uses

7440-70-2, Calcium, uses 7440-74-6, Indium, uses
 7631-86-9, Silica, uses 9003-53-6, Poly(styrene)
 25038-59-9, Polyethylene terephthalate, uses 25067-58-7,
 Polyacetylene 25067-59-8, Poly(9-vinylcarbazole)
 25087-26-7 25190-62-9, Poly(p-phenylene)
 25233-34-5, Polythiophene 26009-24-5, Poly(p-phenylene
 vinylene) 30604-81-0, Polypyrrole 38215-36-0, Coumarin
 6 50926-11-9, Indium tin oxide 51325-91-8,
 4-(Dicyanomethylene)-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran
 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-
 4,4'-diamine 95270-88-5, Poly(fluorene) 126213-51-2,
 Polyethylene dioxythiophene 138184-36-8, MEH-PPV 150405-69-9
 RL: DEV (Device component use); USES (Uses)

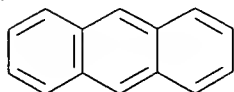
(org./polymer electroluminescent devices
 employing single-ion conductors)

IT 120-12-7, Anthracene, uses 198-55-0, Perylene
 517-51-1, Rubrene 1335-25-7, Lead oxide
 7385-67-3, Nile red 7429-90-5, Aluminum, uses
 7439-89-6, Iron, uses 7439-92-1, Lead, uses
 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses
 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses
 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses
 7440-50-8, Copper, uses 7440-57-5, Gold, uses
 7440-66-6, Zinc, uses 7440-70-2, Calcium, uses
 7440-74-6, Indium, uses 9003-53-6, Poly(styrene)
 25038-59-9, Polyethylene terephthalate, uses 25067-58-7,
 Polyacetylene 25067-59-8, Poly(9-vinylcarbazole)
 25087-26-7 25190-62-9, Poly(p-phenylene)
 25233-34-5, Polythiophene 26009-24-5, Poly(p-phenylene
 vinylene) 30604-81-0, Polypyrrole 38215-36-0, Coumarin
 6 50926-11-9, Indium tin oxide 51325-91-8,
 4-(Dicyanomethylene)-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran
 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-
 4,4'-diamine 95270-88-5, Poly(fluorene) 126213-51-2,
 Polyethylene dioxythiophene

RL: DEV (Device component use); USES (Uses)
 (org./polymer electroluminescent devices
 employing single-ion conductors)

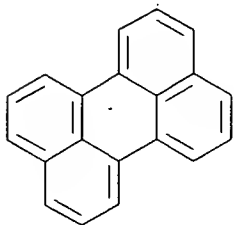
RN 120-12-7 CAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



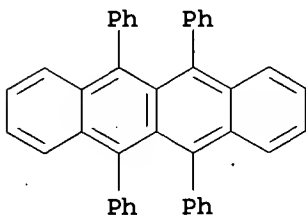
RN 198-55-0 CAPLUS

CN Perylene (8CI, 9CI) (CA INDEX NAME)



RN 517-51-1 CAPLUS

CN Naphthacene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



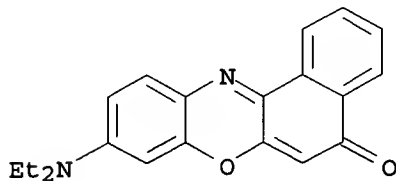
RN 1335-25-7 CAPLUS

CN Lead oxide (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7385-67-3 CAPLUS

CN 5H-Benzo[a]phenoxazin-5-one, 9-(diethylamino)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-89-6 CAPLUS

CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

RN 7439-92-1 CAPLUS
CN Lead (8CI, 9CI) (CA INDEX NAME)

Pb

RN 7439-93-2 CAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7439-95-4 CAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-05-3 CAPLUS
CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

RN 7440-06-4 CAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-22-4 CAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-33-7 CAPLUS
CN Tungsten (8CI, 9CI) (CA INDEX NAME)

W

RN 7440-50-8 CAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-57-5 CAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-66-6 CAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-70-2 CAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 7440-74-6 CAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RN 9003-53-6 CAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

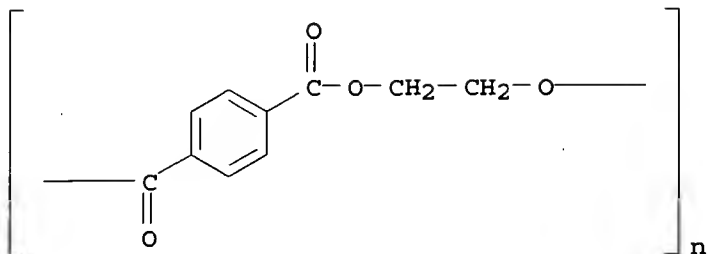
CRN 100-42-5

CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

RN 25038-59-9 CAPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)

KOROMA EIC1700



RN 25067-58-7 CAPLUS
CN Ethyne, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-86-2

CMF C2 H2

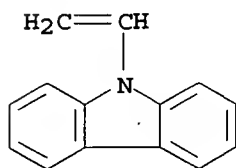


RN 25067-59-8 CAPLUS
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

CMF C14 H11 N

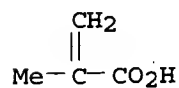


RN 25087-26-7 CAPLUS
CN 2-Propenoic acid, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

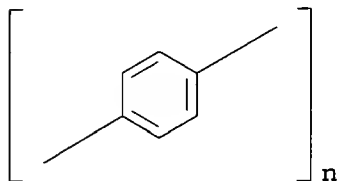
CRN 79-41-4

CMF C4 H6 O2



KOROMA EIC1700

RN 25190-62-9 CAPLUS
CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



RN 25233-34-5 CAPLUS
CN Thiophene, homopolymer (9CI) (CA INDEX NAME)

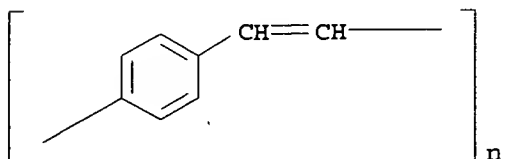
CM 1

CRN 110-02-1

CMF C4 H4 S



RN 26009-24-5 CAPLUS
CN Poly(1,4-phenylene-1,2-ethenediyl) (9CI) (CA INDEX NAME)

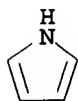


RN 30604-81-0 CAPLUS
CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

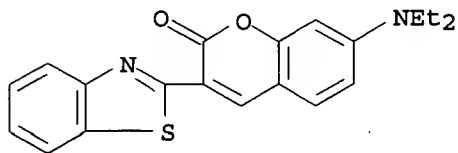
CRN 109-97-7

CMF C4 H5 N



RN 38215-36-0 CAPLUS

CN 2H-1-Benzopyran-2-one, 3-(2-benzothiazolyl)-7-(diethylamino)- (9CI) (CA INDEX NAME)



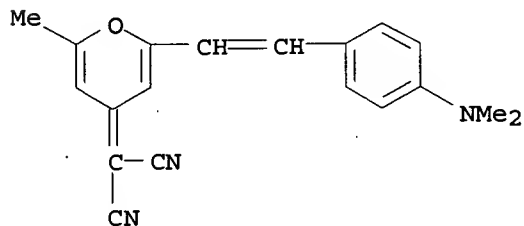
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

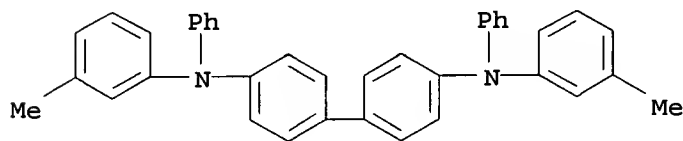
RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



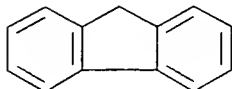
RN 95270-88-5 CAPLUS

CN 9H-Fluorene, homopolymer (9CI) (CA INDEX NAME)

CM 1

KOROMA EIC1700

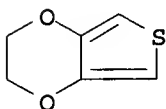
CRN 86-73-7
CMF C13 H10



RN 126213-51-2 CAPLUS
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 12 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:745725 CAPLUS

DOCUMENT NUMBER: 135:310634

TITLE: Organic electroluminescent devices and manufacture

INVENTOR(S): Tsuge, Hodaka; Ishii, Satoshi; Aikawa, Koichiro; Komatsuzaki, Akihiro; Shimada, Yoichi

PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

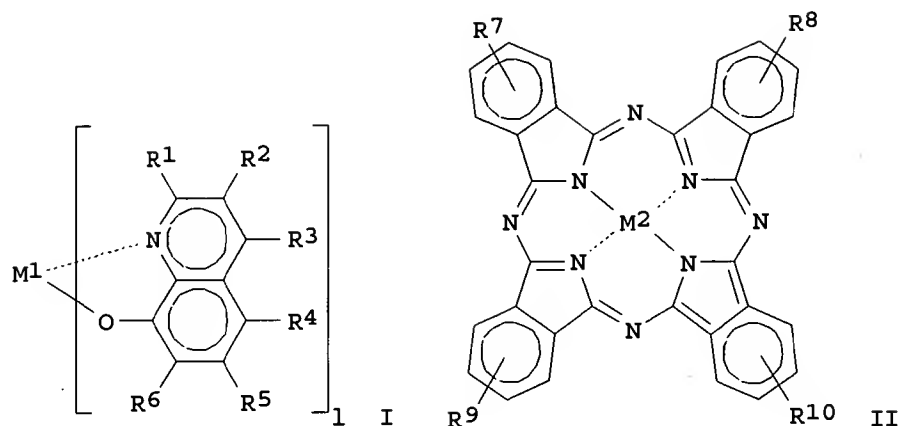
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001284055	A2	20011012	JP 2000-91919	20000329
PRIORITY APPLN. INFO.:			JP 2000-91919	20000329
OTHER SOURCE(S):			MARPAT 135:310634	
GI				

KOROMA EIC1700



- AB The devices comprise: (1) a glass substrate; (2) an ITO 1st electrode; (3) a hole transporting layer; (4) a phosphor layer; (5) an electron injection layer; and (6) a MgAg 2nd electrode, where (5) comprises I or II (M1 = metal having a work function < 3.0 eV; L = valency of M1; M2 = alkali metal; R1-10 = OCnHm; m = 2n + 1 or 2n - k; k = pos. odd no.).
- IC ICM H05B033-22
ICS H05B033-10; H05B033-14
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29
- ST org electroluminescent metal quinolinol
- IT Electroluminescent devices
Electron transport
Glass substrates
Hole transport
Phosphors
(Org. electroluminescent devices and manuf.)
- IT 91-64-5, Coumarin 2043-06-3 2085-33-8, Tris(8-quinolinolato)aluminum 2872-54-0 7439-93-2, Lithium, uses 7440-09-7, Potassium, uses 7440-17-7, Rubidium, uses 7440-46-2, Cesium, uses 9003-53-6, Polystyrene 9017-21-4, Polyvinyltoluene 20984-33-2, 8-Quinolinol, 6-methyl- 25036-01-5, Polyacenaphthylene 25067-59-8, Poly-N-vinyl carbazole 25232-08-0, Poly-4-vinylbiphenyl 25387-93-3 28406-56-6, Poly2-vinylnaphthalene 29659-51-6, Poly-9-vinylnanthracene 37271-44-6 50926-11-9, ITO 59269-51-1, Polyvinylphenol 86885-30-5, Poly-9-vinylphenanthrene 111716-29-1 133030-00-9 163359-60-2 197089-42-2 228863-44-3 289625-34-9 292056-29-2 292624-48-7
RL: DEV (Device component use); USES (Uses)
(Org. electroluminescent devices and manuf.)
- IT 7439-93-2, Lithium, uses 9003-53-6, Polystyrene

9017-21-4, Polyvinyltoluene 25067-59-8, Poly-N-vinyl
carbazole 25232-08-0, Poly-4-vinylbiphenyl 50926-11-9,
ITO 59269-51-1, Polyvinylphenol 197089-42-2

RL: DEV (Device component use); USES (Uses)

(Org. electroluminescent devices and
manuf.)

RN 7439-93-2 CAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 9003-53-6 CAPLUS

CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

RN 9017-21-4 CAPLUS

CN Benzene, ethenylmethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 25013-15-4

CMF C9 H10

CCI IDS



D1-Me

D1- $\text{CH}=\text{CH}_2$

RN 25067-59-8 CAPLUS

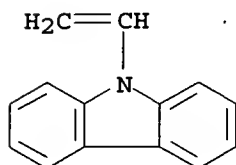
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

KOROMA EIC1700

CRN 1484-13-5

CMF C14 H11 N



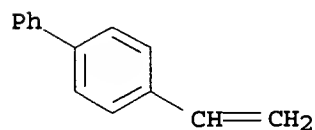
RN 25232-08-0 CAPLUS

CN 1,1'-Biphenyl, 4-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2350-89-2

CMF C14 H12



RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====		
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 59269-51-1 CAPLUS

CN Phenol, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 31257-96-2

CMF C8 H8 O

CCI IDS



D1- OH

D1- CH=CH₂

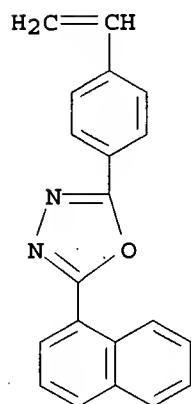
RN 197089-42-2 CAPLUS

CN 1,3,4-Oxadiazole, 2-(4-ethenylphenyl)-5-(1-naphthalenyl)-, homopolymer
(9CI) (CA INDEX NAME)

CM 1

CRN 197089-41-1

CMF C20 H14 N2 O



L47 ANSWER 13 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:745722 CAPLUS

DOCUMENT NUMBER: 135:295948

TITLE: **Organic electroluminescent**
full-color display panels and manufacture

INVENTOR(S): Akai, Tomonori

PATENT ASSIGNEE(S): Sharp Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

KOROMA EIC1700

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001284048	A2	20011012	JP 2000-102423	20000404
PRIORITY APPLN. INFO.:			JP 2000-102423	20000404

AB The devices comprise: (1) a glass substrate; (2) an ITO 1st electrode array (.dblvert. X) (3) a hole injection layer; (4) a hole transporting layer; (5) a red, a green and a blue pixel matrix; (6) an electron transporting layer; (7) an electron injecting layer; and (8) a 2nd electrode array (.dblvert. Y), where (2)-(8) are formed by vacuum vapor deposition methods using shadow masks.

IC ICM H05B033-10
ICS C23C014-04; C23C014-06; H05B033-12; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent full color display

IT Electroluminescent devices
Electron transport
Glass substrates
Hole transport
Luminescence
Optical imaging devices
Shadow masks
(org. electroluminescent full-color display panels and manuf.)

IT Vapor deposition process
(vacuum; org. electroluminescent full-color display panels and manuf.)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent full-color display panels and manuf.)

IT 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent full-color display panels and manuf.)

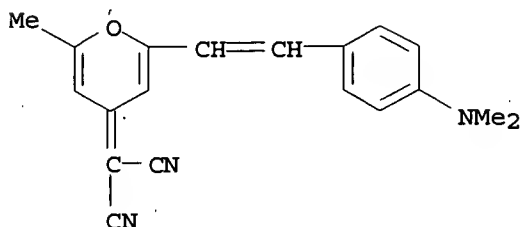
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

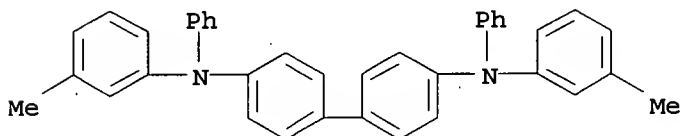
RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



L47 ANSWER 14 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:745720 CAPLUS

DOCUMENT NUMBER: 135:310632

TITLE: Organic electroluminescent devices and manufacture

INVENTOR(S): Komatsuzaki, Akihiro; Ishii, Satoshi; Aikawa, Koichiro; Tsuge, Hodaka; Shimada, Yoichi

PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001284045	A2	20011012	JP 2000-91916	20000329
PRIORITY APPLN. INFO.:			JP 2000-91916	20000329
AB The devices comprise: (1) a glass substrate; (2) an ITO 1st electrode; (3) a hole transporting layer; (4) a phosphor layer; (5) an electron injection layer; and (6) a MgAg 2nd electrode.				
IC ICM H05B033-10				
ICS H05B033-14				
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related				

Properties)

ST org electroluminescent metal quinolinol

IT Anodes

Cathodes

Electroluminescent devices

Electron transport

Glass substrates

Hole transport

Phosphors

(org. electroluminescent devices and
manuf.)

IT 91-64-5, Coumarin 2085-33-8, Tris(8-quinolinolato)aluminum
9003-53-6, Polystyrene 9017-21-4, Polyvinyltoluene
25036-01-5, Polyacenaphthylene 25067-59-8, Poly-N-vinyl
carbazole 25232-08-0, Poly-4-vinylbiphenyl 28406-56-6,
Poly2-vinylnaphthalene 29659-51-6, Poly-9-vinylnanthracene 37271-44-6
50926-11-9, ITO 51325-91-8 51325-95-2
59269-51-1, Polyvinylphenol 86885-30-5, Poly-9-vinylphenanthrene
136711-27-8 173394-18-8 193968-77-3 197089-42-2
292624-63-6 292624-95-4 292624-96-5 292624-99-8
366001-69-6

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

IT 9003-53-6, Polystyrene 9017-21-4, Polyvinyltoluene
25067-59-8, Poly-N-vinyl carbazole 25232-08-0,
Poly-4-vinylbiphenyl 50926-11-9, ITO 51325-91-8
59269-51-1, Polyvinylphenol 197089-42-2
292624-63-6 292624-95-4

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

RN 9003-53-6 CAPLUS

CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8

$H_2C=CH-Ph$

RN 9017-21-4 CAPLUS

CN Benzene, ethenylmethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 25013-15-4

CMF C9 H10

CCI IDS

KOROMA EIC1700



D1-Me

D1-CH=CH₂

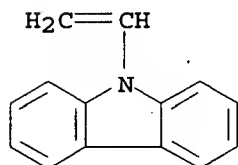
RN 25067-59-8 CAPLUS

CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5

CMF C14 H11 N



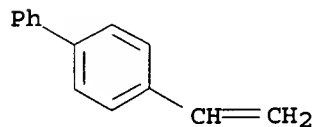
RN 25232-08-0 CAPLUS

CN 1,1'-Biphenyl, 4-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2350-89-2

CMF C14 H12



RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

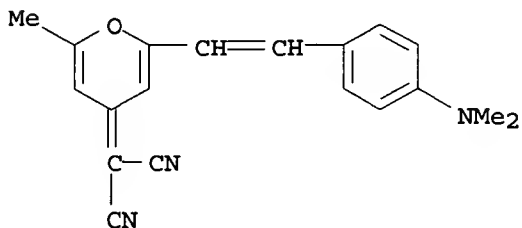
Component	Ratio	Component Registry Number
O	x	17778-80-2

KOROMA EIC1700

In		x		7440-74-6
Sn		x		7440-31-5

RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 59269-51-1 CAPLUS

CN Phenol, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 31257-96-2

CMF C8 H8 O

CCI IDS



D1- OH

D1- CH=CH₂

RN 197089-42-2 CAPLUS

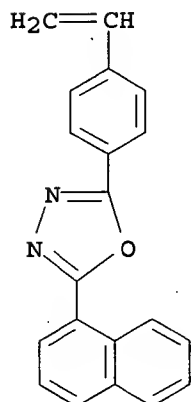
CN 1,3,4-Oxadiazole, 2-(4-ethenylphenyl)-5-(1-naphthalenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 197089-41-1

CMF C20 H14 N2 O

KOROMA EIC1700



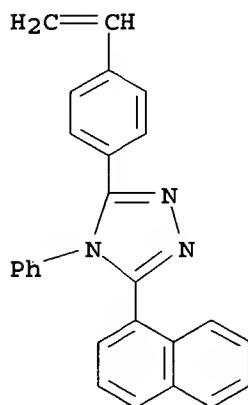
RN 292624-63-6 CAPLUS

CN 4H-1,2,4-Triazole, 3-(4-ethenylphenyl)-5-(1-naphthalenyl)-4-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 292624-62-5

CMF C26 H19 N3



RN 292624-95-4 CAPLUS

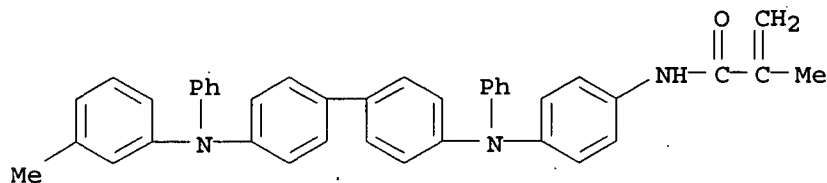
CN 2-Propenamide, 2-methyl-N-[4-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 292624-94-3

CMF C41 H35 N3 O

KOROMA EIC1700



L47 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:682097 CAPLUS

DOCUMENT NUMBER: 135:279869

TITLE: Modification of indium tin oxide for improved
hole injection in organic light
emitting diodes

AUTHOR(S): Shen, Yulong; Jacobs, Daniel B.; Malliaras, George G.;
Koley, Goutam; Spencer, Michael G.; Ioannidis,
Andronique

CORPORATE SOURCE: Materials Science and Engineering, Cornell University,
Ithaca, NY, 14853, USA

SOURCE: Advanced Materials (Weinheim, Germany) (2001), 13(16),
1234-1238

CODEN: ADVMEW; ISSN: 0935-9648

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **injection** efficiency measurements were carried out to
characterize the contact between In Sn oxide (ITO) and the org.
semiconductor TPD. Thick Pt films were deposited on clean ITO coated
glass substrates by e-beam evapn. A suitable mask was used to
cover only part of the ITO electrode with Pt. At. force microscope was
used to study the surface morphol. of the ITO electrodes. **Hole**
drift mobility in TPD was measured with the time-of-flight technique in 20
.mu.m thick Pt films sandwiched between ITO and Al electrodes. The
injection efficiency measurements showed that coating ITO with an
ultrathin **layer** of Pt enhanced its **hole**
injection properties. Enhancement of **hole**
injection from the anode led to a higher **hole** d. at the
TPD side of the interface, resulting to a higher elec. field drop across
the Alq3 **layer**. This resulted to enhanced **electron**
injection and transport in Alq3, which tends to restore the ratio
of charge densities at the interface. Modification of ITO with ultrathin
layers of Pt resulted into a lowering of the operating voltage
without affecting the **device** efficiency.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)

Section cross-reference(s): 76

ST surface modification indium tin oxide **hole injection**
org LED

IT **Electroluminescent devices**

(modification of indium tin oxide for improved **hole**

injection in org. LEDs)

IT Hole (electron)
(modification of indium tin oxide in org. LEDs for improved injection of)

IT Atomic force microscopy
(of indium tin oxide modified for improved hole injection in org. LEDs)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(modification for improved hole injection in org. LEDs)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7440-06-4, Platinum, uses 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(modification of indium tin oxide for improved hole injection in org. LEDs contg.)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(modification for improved hole injection in org. LEDs)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 7440-06-4, Platinum, uses 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(modification of indium tin oxide for improved hole injection in org. LEDs contg.)

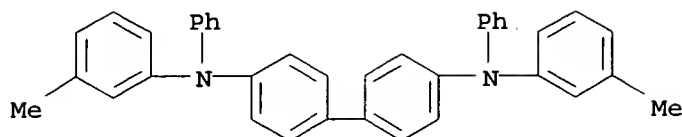
RN 7440-06-4 CAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 16 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:564156 CAPLUS
 DOCUMENT NUMBER: 135:129369
 TITLE: Film formation methods of **organic electroluminescent** components
 INVENTOR(S): Yokoishi, Shoji
 PATENT ASSIGNEE(S): Toyota Motor Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001210468	A2	20010803	JP 2000-17524	20000126

PRIORITY APPLN. INFO.: JP 2000-17524 20000126

AB The methods comprise the steps of: on a **glass** substrate, forming an ITO electrode stripe array (.dblvert. X) and a **hole injecting/transport layer**; forming a red, a green and a blue phosphor pixel matrix formed by gravity-filling the partitioned cavity matrix with the dye solns.; drying the solns.; forming an **electron transport layer**; and forming a MgAg electrode stripe array (.dblvert. Y).

IC ICM H05B033-10
 ICS H05B033-12; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST film formation **org electroluminescent** component

IT Gravity
 Luminescent substances
 Membranes, nonbiological
 Optical imaging **devices**
 (film formation method of **org. electroluminescent** components)

IT 1055-83-0 2085-33-8, Tris(8-quinolinolato)aluminum 7385-67-3, Nile red 25036-53-7, Kapton 25067-59-8, Polyvinyl carbazole 37271-44-6 38215-36-0, Coumarin 540 50926-11-9, ITO

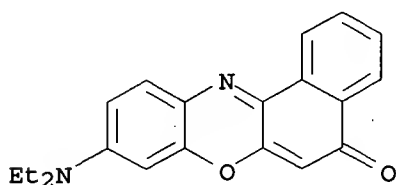
RL: DEV (Device component use); USES (Uses)
 (film formation method of **org. electroluminescent**

components)

IT 7385-67-3, Nile red 25067-59-8, Polyvinyl carbazole
38215-36-0, Coumarin 540 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(film formation method of org. electroluminescent
components)

RN 7385-67-3 CAPLUS

CN 5H-Benzo[a]phenoxazin-5-one, 9-(diethylamino)- (7CI, 8CI, 9CI) (CA INDEX
NAME)



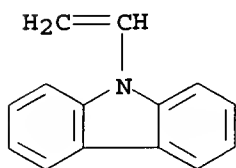
RN 25067-59-8 CAPLUS

CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

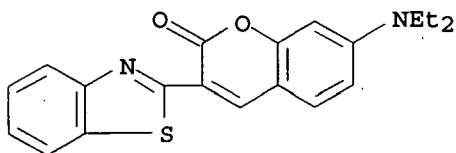
CRN 1484-13-5

CMF C14 H11 N



RN 38215-36-0 CAPLUS

CN 2H-1-Benzopyran-2-one, 3-(2-benzothiazolyl)-7-(diethylamino)- (9CI) (CA
INDEX NAME)



RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
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```

=====+=====+=====
O          |          x          |          17778-80-2
In         |          x          |          7440-74-6
Sn         |          x          |          7440-31-5

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L47 ANSWER 17 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:521203 CAPLUS
 DOCUMENT NUMBER: 135:114240
 TITLE: **Organic electroluminescent display devices**
 INVENTOR(S): Arai, Michio; Yamamoto, Hiroshi
 PATENT ASSIGNEE(S): TDK Corporation, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001196174	A2	20010719	JP 2000-1368	20000107
US 2001043043	A1	20011122	US 2001-755446	20010106
PRIORITY APPLN. INFO.:			JP 2000-1368	A 20000107
			JP 2000-1369	A 20000107
			JP 2000-259433	A 20000829

AB The **devices** comprise: a **glass** substrate; and a color filter, a barrier, a **hole injecting** electrode, a **hole injecting/transporting**, a phosphor, an **electron injecting/transporting** and an **electron -injecting** electrode layer.

IC ICM H05B033-12
 ICS C23C014-06; G09F009-00; G09F009-30; H01L033-00; H05B033-04; H05B033-10; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

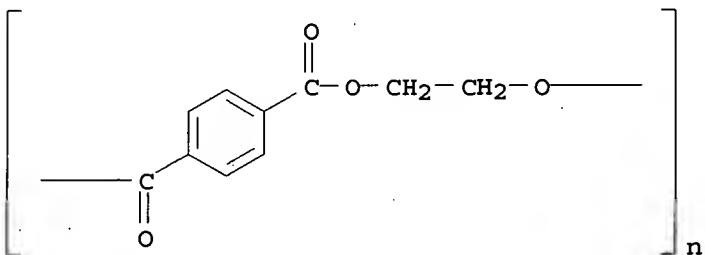
ST **org electroluminescent display**

IT Electrodes
 Electroluminescent devices
 Glass substrates
 Optical filters
 Optical imaging **devices**
 Phosphors
 (**org. electroluminescent display devices**)

IT Polyesters, uses
 RL: DEV (**Device component use**); USES (**Uses**)
 (**org. electroluminescent display devices**)

IT 147-14-8, Phthalocyanine blue 2085-33-8, Tris(8-quinolinolato)aluminum 12798-95-7 25038-59-9, Polyethyleneterephthalate, uses 39283-39-1, Quinacridone red 50926-11-9, ITO
 RL: DEV (**Device component use**); USES (**Uses**)

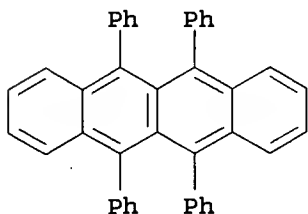
(org. electroluminescent display devices)
 IT 517-51-1, Rubrene 169224-63-9 203007-32-3 350230-48-7
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent display devices)
 IT 25038-59-9, Polyethyleneterephthalate, uses 50926-11-9,
 ITO
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent display devices)
 RN 25038-59-9 CAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 517-51-1, Rubrene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent display devices)
 RN 517-51-1 CAPLUS
 CN Naphthacene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 18 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:469522 CAPLUS

KOROMA EIC1700

DOCUMENT NUMBER: 135:68374
 TITLE: **Organic electroluminescent device with transparent cathode and its production method**
 INVENTOR(S): Taniguchi, Akio; Koyama, Toshiki; Hayashi, Shoko; Yamamori, Asuka
 PATENT ASSIGNEE(S): Mimaki Denshi Buhin K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001176670	A2	20010629	JP 1999-354435	19991214
PRIORITY APPLN. INFO.:			JP 1999-354435	19991214

AB The invention relates to an **org. electroluminescent device** equipped with the cathode having high transmission in a visible range, thus the **device** comprises a transparent anode, a **hole transporting layer**, a **light-emitting layer**, a 3-30 nm thick **electron injecting colorless org. layer**, and an indium zinc oxide (IZO) transparent cathode, all **layers** stacked in that order on a **transparent substrate**.

IC ICM H05B033-22
 ICS H05B033-14; H05B033-28

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74

ST **org electroluminescent device** indium zinc oxide transparent cathode; LED **org** indium zinc oxide transparent cathode

IT **Electroluminescent devices**
 Sputtering
 (org. electroluminescent device with transparent cathode)

IT Cathodes
 Electrodes
 (transparent; org. electroluminescent device with transparent cathode)

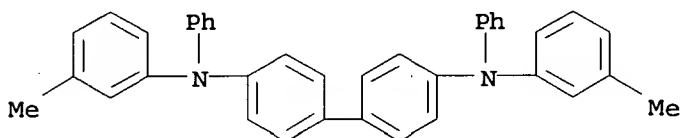
IT 2085-33-8, al 8q 14024-56-7, Bis(acetylacetonato)magnesium 50926-11-9, ITO 65181-78-4, TPD 117944-65-7, Indium zinc oxide
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent device with transparent cathode)

IT 50926-11-9, ITO 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent device with transparent cathode)

RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



L47 ANSWER 19 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:452652 CAPLUS

DOCUMENT NUMBER: 135:53363

TITLE: **Organic electroluminescent display devices and manufacture**

INVENTOR(S): Tsuruoka, Masahisa; Shimizu, Yukihiro; Miyauchi, Kazuo

PATENT ASSIGNEE(S): Futaba Denshi Kogyo Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001167874	A2	20010622	JP 2000-269551	20000906
PRIORITY APPLN. INFO.:			JP 1999-276713	A 19990929

AB The **devices** comprise: a **glass** substrate; an ITO 1st electrode array (.dblvert. X); a **hole injection**, a **hole** transport, a phosphor, an **electron** transport, and an **electron injection layer**; a 2nd electrode array (.dblvert. Y); and a red, a green and a blue filter matrix.

IC ICM H05B033-02

ICS H05B033-10; H05B033-12; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent display device manuf**

IT Anodes

Cathodes

Electroluminescent devices

Electron transport

Glass substrates

Hole transport

Optical filters

Optical imaging devices

Printing apparatus

(org. electroluminescent display devices
and manuf.)

IT Epoxy resins, uses

Polyimides, uses

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent display devices
and manuf.)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO

65181-78-4, TPD 123847-85-8, .alpha.-NPD

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent display devices
and manuf.)

IT 50926-11-9, ITO 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)

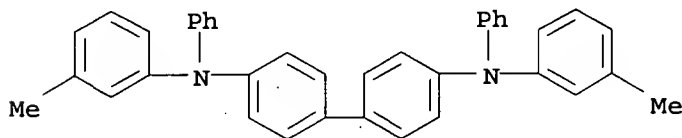
(org. electroluminescent display devices
and manuf.)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

L47 ANSWER 20 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:416624 CAPLUS

DOCUMENT NUMBER: 135:38756

TITLE: Organic EL devices

INVENTOR(S): Suzuki, Harumi; Kato, Tetsuya

KOROMA EIC1700

PATENT ASSIGNEE(S): Denso Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001155860	A2	20010608	JP 2000-229009	20000728
US 6528188	B1	20030304	US 2000-662922	20000915
PRIORITY APPLN. INFO.:			JP 1999-262318	A 19990916
			JP 2000-229009	A 20000728

AB The devices comprise: a glass substrate; an ITO anode;
 a hole injecting layer; a hole
 -transporting and an electron-transporting phosphor
 layer; and an electron injecting and a cathode
 layer.

IC ICM H05B033-12

ICS C09K011-06; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)

ST org electroluminescent device

IT Anodes

Cathodes

Electric current

Electron transport

Glass substrates

Hole transport

Luminescence

Luminescent substances

(org. EL devices)

IT 147-14-8, Copper phthalocyanine 7789-24-4, Lithium fluoride (LiF), uses
 23467-27-8 50926-11-9, ITO 51325-91-8, DCM1
 123847-85-8, .alpha.-NPD 146162-54-1.

RL: DEV (Device component use); USES (Uses)

(org. EL devices)

IT 198-55-0, Perylene 200052-70-6, Propanedinitrile,
 [2-(1,1-dimethylethyl)-6-[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-
 benzo[ij]quinolizin-9-yl)ethenyl]-4H-pyran-4-ylidene]-

RL: MOA (Modifier or additive use); USES (Uses)

(org. EL devices)

IT 50926-11-9, ITO 51325-91-8, DCM1

RL: DEV (Device component use); USES (Uses)

(org. EL devices)

RN 50926-11-9 CAPLUS

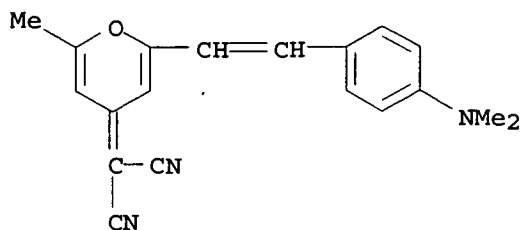
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====+=====+=====		

O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)

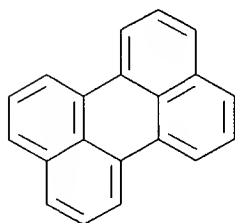


IT 198-55-0, Perylene

RL: MOA (Modifier or additive use); USES (Uses)
(org. EL devices)

RN 198-55-0 CAPLUS

CN Perylene (8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 21 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:336769 CAPLUS

DOCUMENT NUMBER: 134:334026

TITLE: Organic electroluminescent component

INVENTOR(S): Komatsu, Takahiro; Gyotoku, Akira; Yoshida, Koji; Hamano, Keishi

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

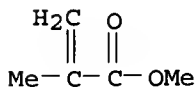
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

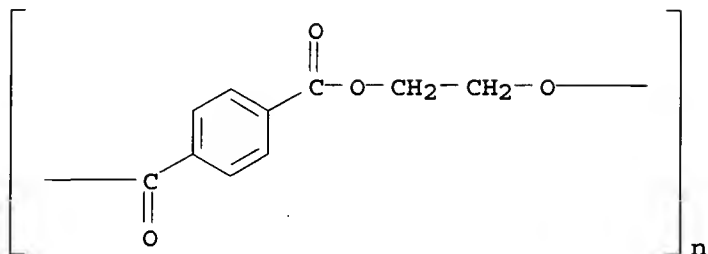
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001126861 A2 20010511 JP 1999-302147 19991025
 PRIORITY APPLN. INFO.: JP 1999-302147 19991025
 AB The invention refers to an **electroluminescent** component comprising a semi-transparent polymeric film **substrate**, a hole injection anode, a emitting layer, an **electron injecting** cathode, wherein the polymeric film has optical properties to stabilize the emission in order to optimize the **device** at low cost.
 IC ICM H05B033-02
 ICS H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST **electroluminescent device**
 IT **Electroluminescent devices**
 (org. **electroluminescent** component)
 IT Polycarbonates, uses
 Polyesters, uses
 RL: DEV (Device component use); USES (Uses)
 (org. **electroluminescent** component)
 IT Optical properties
 (translucency; org. **electroluminescent** component)
 IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 9011-14-7, PMMA 25038-59-9, Polyethylene terephthalate, uses 50926-11-9, ITO 65181-78-4, TPD 81458-41-5, OFPR-800
 RL: DEV (Device component use); USES (Uses)
 (org. **electroluminescent** component)
 IT 9011-14-7, PMMA 25038-59-9, Polyethylene terephthalate, uses 50926-11-9, ITO 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (org. **electroluminescent** component)
 RN 9011-14-7 CAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 80-62-6
 CMF C5 H8 O2



RN 25038-59-9 CAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)

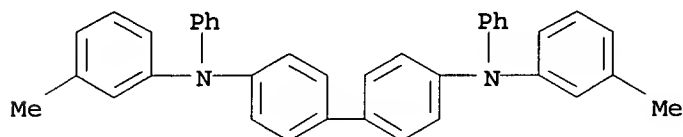


RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

L47 ANSWER 22 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:299279 CAPLUS

DOCUMENT NUMBER: 134:302816

TITLE: Organic EL devices

INVENTOR(S): Arai, Michio

PATENT ASSIGNEE(S): TDK Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001118675	A2	20010427	JP 1999-299276	19991021
PRIORITY APPLN. INFO.:			JP 1999-299276	19991021

AB The devices comprise: a glass substrate; an ITO 1st

electrode; a hole injecting, a hole transporting, a phosphor, an electron transporting, an electron-injecting, and a 2nd electrode layer; and a sealing layer comprising SiNx, SiCx or SiOxCy contg. optional P and/or H.

IC ICM H05B033-04

ICS H05B033-12; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent ITO EL silicon alloy

IT Electron transport

Electronics

Glass substrates

Hole transport

Membranes, nonbiological

Nitriding

Oxidation

Stress, mechanical

(org. EL components)

IT 409-21-2, Silicon monocarbide, uses 2085-33-8, Tris(8-quinolinolato)aluminum 7440-21-3, Silicon, uses 7440-44-0, Carbon, uses 7723-14-0, Phosphorus, uses 12798-95-7 50926-11-9, ITO 65181-78-4, TPD 113498-09-2, Silicon nitride (SiN0.8) 123847-85-8, .alpha.-NPD 124729-98-2, MTDATA 154067-47-7, Silicon carbide (SiC0.7) 162816-44-6, Silicon carbide (SiC0.75) 334642-02-3, Silicon carbide oxide (SiC0.400.8)

RL: DEV (Device component use); USES (Uses)

(org. EL components)

IT 50926-11-9, ITO 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)

(org. EL components)

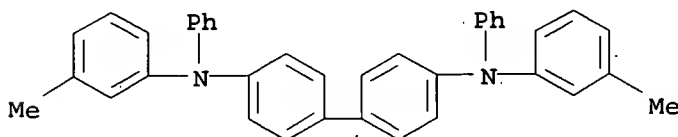
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



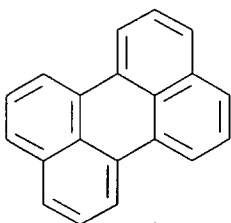
L47 ANSWER 23 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:246809 CAPLUS
 DOCUMENT NUMBER: 134:273276
 TITLE: **Organic electroluminescent devices and manufacturing apparatus**
 INVENTOR(S): Sano, Junichi; Tsujioka, Tsuyoshi
 PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2001093667	A2	20010406	JP 1999-274326	19990928
PRIORITY APPLN. INFO.:				JP 1999-274326	19990928
AB	The app. comprises a chamber contg. a rolling belt carrying a glass substrate array, a deposition mask array, and a vapor source array for depositing an ITO 1st electrode, a hole injection/transport , a phosphor, an electron transport and a 2nd electrode layer .				
IC	ICM H05B033-10 ICS H05B033-12; H05B033-14				
CC	73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				
ST	org electroluminescent device manufg app				
IT	Electroluminescent devices Electron transport Evaporation Glass substrates Hole transport Membranes, nonbiological Photomasks (lithographic masks) (org. electroluminescent devices and manufg. app.)				
IT	332133-83-2, AD 688 RL: MOA (Modifier or additive use); USES (Uses) (laser dye; org. electroluminescent devices and manufg. app.)				
IT	147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO 123847-85-8, NPB 146162-54-1 RL: DEV (Device component use); USES (Uses) (org. electroluminescent devices and manufg. app.)				
IT	198-55-0, Perylene RL: MOA (Modifier or additive use); USES (Uses) (org. electroluminescent devices and manufg. app.)				

IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices and
 manufg. app.)
 RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 198-55-0, Perylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices and
 manufg. app.)
 RN 198-55-0 CAPLUS
 CN Perylene (8CI, 9CI) (CA INDEX NAME)



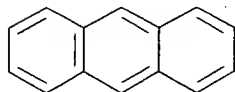
L47 ANSWER 24 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:210262 CAPLUS
 DOCUMENT NUMBER: 134:244994
 TITLE: Organic electroluminescent display
 INVENTOR(S): Kido, Junji; Ebisawa, Akira
 PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2001076874	A2	20010323	JP 1999-253109	19990907
PRIORITY APPLN. INFO.:			JP 1999-253109	19990907

AB The display comprises: a glass substrate; an ITO hole-injecting electrode; a phosphor layer comprising a fluorene-anthracene copolymer; a buffer layer comprising an

electron-transporting tris(8-quinolinolato)aluminum; and an **AlLi electron-injecting** electrode, the **buffer layer** is <40 nm thick; and the **phosphor layer** is formed using an ink-jet or a gravure printing method.

IC ICM H05B033-14
ICS H05B033-10
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **org electroluminescent** display polymer phosphor
IT Electric current
Electrodes
Electroluminescent devices
Glass substrates
Inks
Phosphors
Printing (impact)
(**org. electroluminescent** display)
IT 86-73-7, Fluorene 120-12-7, Anthracene, uses 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO 71747-83-6, Aluminum 93. lithium 7 atomic%
RL: DEV (Device component use); USES (Uses)
(**org. electroluminescent** display)
IT 120-12-7, Anthracene, uses 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(**org. electroluminescent** display)
RN 120-12-7 CAPLUS
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



RN 50926-11-9 CAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 25 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:862734 CAPLUS

DOCUMENT NUMBER: 134:170236

TITLE: Effect of cathode on performance of blue
organic electroluminescence
device

AUTHOR(S): Li, Feng-hong; Tian, Wen-jing; Wu, Ying; Wu, Fang;

Shen, Jia-cong
CORPORATE SOURCE: Key Laboratory of Supramolecular Structure and Spectroscopy, Jilin University, Changchun, 130023, Peop. Rep. China
SOURCE: Faguang Xuebao (2000), 21(3), 265-268
CODEN: FAXUEW; ISSN: 1000-7032
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB Since the discovery of efficient org. light-emitting devices (OLEDs), there was considerable interest in developing OLEDs with high brightness, high efficiency, and long lifetime for display applications. This resulted in substantial research activity to increase the carrier mobility, color gamut, and electroluminescence efficiency of org. materials, as well as to improve electron and hole injection by the contacts. The brightness and efficiency of OLEDs depend on the no. d. of electrons and holes in the emission layer, so that effective charge injection into the org. materials is crit. for optimum device performance. For the hole-injecting contact, In Sn oxide (ITO) is often used because of its transparency and high work function (5.1 eV). An efficient electron-injecting contact is usually a low-work-function material such as Mg, Ca, or Li. These materials are typically alloyed with metal such as Al or Ag to form contact that is both more stable and more resistant to corrosion upon exposure to air. At the same time inserting an insulating layer between cathode and org. material is effective means to improve current injection and EL. Some multilayers OLEDs were fabricated using Al, LiF/Al and Mg:Ag as cathode resp. while ITO-coated glass as anode, 1,2,3,4,5-pentaphenyl-1,3-cyclopentadiene (PPCP) as emitter, N,N'-diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine (TPD) as hole-transport layer, tris(8-hydroxyquinoline)aluminum (Alq), 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (PBD) or 2,5-bis(5-tert-butyl-2-benzoxazolyl)thiophene (BBOT) as electron-transport layer, resp. And effect of cathode on performance of blue OLEDs was studied. All org. layers were prepd. by a high-vacuum multisource-type org. mol. deposition system. From result, the performance of device with LiF/Al as cathode excels that of the device with Al or Mg:Ag as cathode. Devices with LiF/Al show better I-V characteristics and higher EL efficiency. The presence of LiF at the metal-org. material interface cause band bending of org. material, thus lower the electron-injection barrier height.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST cathode blue org electroluminescent device
IT Electroluminescent devices
(cathode effect on performance of blue org. electroluminescent device)
IT Cathodes

(effect on performance of blue org.
electroluminescent device)

IT Electric current-potential relationship
(of blue org. electroluminescent device)

IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses
37271-44-6 50926-11-9, Indium tin oxide

RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PROC (Process); USES (Uses)

(cathode effect on performance of blue org.
electroluminescent device)

IT 2085-33-8, Tris(8-hydroxyquinoline)aluminum 2519-10-0,
1,2,3,4,5-Pentaphenyl-1,3-cyclopentadiene 7128-64-5,
2,5-Bis(5-tert-butyl-2-benzoxazolyl)thiophene 15082-28-7,
2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole
65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-
4,4'-diamine

RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PROC (Process); USES (Uses)

(cathode effect on performance of blue org.
electroluminescent device contg.)

IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide

RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PROC (Process); USES (Uses)

(cathode effect on performance of blue org.
electroluminescent device)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

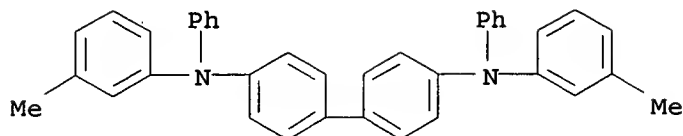
IT 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-
4,4'-diamine

RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PROC (Process); USES (Uses)

(cathode effect on performance of blue org.
electroluminescent device contg.)

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 26 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000:837194 CAPLUS
 DOCUMENT NUMBER: 134:11285
 TITLE: **Organic electroluminescent devices and manufacture**
 INVENTOR(S): Kubota, Hirofumi
 PATENT ASSIGNEE(S): Pioneer Electronic Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000331782	A2	20001130	JP 1999-138371	19990519
PRIORITY APPLN. INFO.:			JP 1999-138371	19990519

AB The **devices** comprise: a **glass** substrate; an ITO electrode stripe array; a current-leak preventive layer (e.g. aluminum phthalocyanine; .apprx.10 nm thick); and a **hole-injection**, a hole transport, a phosphor, an **electron injection** and a metal electrode layer

IC ICM H05B033-22
 ICS H05B033-10; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent** current leak preventive layer

IT Electric current
 Electrodes
 Laminated materials
 Laser radiation
 (org. electroluminescent devices and manuf.)

IT Materials
 (org.; org. electroluminescent devices and manuf.)

IT **Electrodes**
 (transparent; org. electroluminescent devices and manuf.)

IT 147-14-8, Copper phthalocyanine 12033-89-5, Silicon nitride, uses

12057-24-8, Lithium oxide (Li₂O), uses 65181-78-4, TPD
84370-49-0

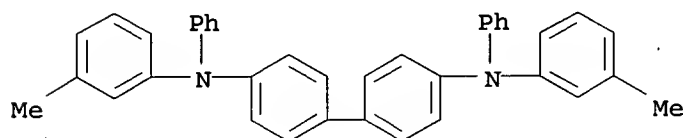
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

IT 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices and
manuf.)

RN. 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 27 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:823171 CAPLUS

DOCUMENT NUMBER: 133:367672

TITLE: Manufacture **organic EL devices** and ink compositions

INVENTOR(S): Seki, Shunichi; Kiguchi, Hiroshi

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000323276	A2	20001124	JP 1999-134320	19990514
PRIORITY APPLN. INFO.:			JP 1999-134320	19990514

AB The **devices** comprise: (1) a **glass** substrate; (2) an ITO anode; and (3) a **hole injection**, (4) a phosphor, (5) an **electron** transport and (6) a cathode **layer**, where (3) and (4) are formed using an ink **injection**; and the ink comprises a viscosity 1-20 mPa.cntdot.s, a surface tension 20-70 mN/m, a contact angle at nozzle 30-170.degree. and a solid concn. 0.01-10 %.

IC ICM H05B033-10

ICS G09F009-30; H05B033-12; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent ink jet phosphor hole injection**

IT Anodes
Cathodes
Films
Luminescent substances
(manuf. org. EL devices and ink compns.)

IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(manuf. org. EL devices and ink compns.)

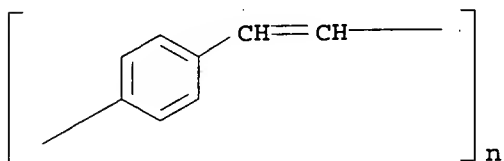
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(uses; manuf. org. EL devices and ink compns.)

IT 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl) 50851-57-5
, Polystyrenesulfonic acid 50926-11-9, ITO 64339-18-0,
Rhodamine 101 126213-51-2
RL: DEV (Device component use); USES (Uses)
(manuf. org. EL devices and ink compns.)

IT 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl) 50851-57-5
, Polystyrenesulfonic acid 50926-11-9, ITO 126213-51-2
RL: DEV (Device component use); USES (Uses)
(manuf. org. EL devices and ink compns.)

RN 26009-24-5 CAPLUS

CN Poly(1,4-phenylene-1,2-ethenediyl) (9CI) (CA INDEX NAME)



RN 50851-57-5 CAPLUS

CN Benzenesulfonic acid, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 26914-43-2

CMF C8 H8 O3 S

CCI IDS

D1-CH=CH₂D1-SO₃H

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

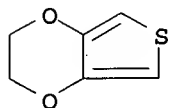
RN 126213-51-2 CAPLUS

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1

CMF C6 H6 O2 S



L47 ANSWER 28 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:749092 CAPLUS

DOCUMENT NUMBER: 133:315398

TITLE: Organic electroluminescent display devices

INVENTOR(S): Furukawa, Hirotada; Suzuki, Mitsunari; Saito, Yoshihiro

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

KOROMA EIC1700

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000298456	A2	20001024	JP 1999-221733	19990804
PRIORITY APPLN. INFO.:			JP 1999-33430	A 19990210

AB The devices comprise: a glass substrate; an ITO hole-injection data electrode array (.dblvert. X); a hole transport layer; a red, a green and a blue phosphor matrix array; an electron transport layer; and an electron-injection scanning electrode array (.dblvert. Y), where the electrode arrays comprise a microprocessor, an integrated circuit and a printed circuit board.

IC ICM G09G003-30
ICS G09F009-30; G09G003-20; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent phosphor hole electron transport

IT Electroluminescent devices
Electron transport
Glass substrates
Hole transport
Integrated circuits
Optical imaging devices
Phosphors
Printed circuit boards
(org. electroluminescent display devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 12798-95-7 25233-34-5
, Poly thiophene 50926-11-9, ITO 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent display devices)

IT 25233-34-5, Poly thiophene 50926-11-9, ITO 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent display devices)

RN 25233-34-5 CAPLUS

CN Thiophene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 110-02-1

CMF C4 H4 S



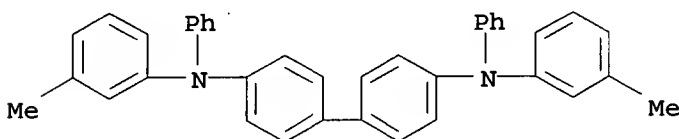
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-(9CI) (CA INDEX NAME)



L47 ANSWER 29 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:643440 CAPLUS

DOCUMENT NUMBER: 133:215279

TITLE: Organic electroluminescent devices

INVENTOR(S): Wakabayashi, Morimitsu; Yamamoto, Hajime; Fukumoto, Shigeru; Sato, Yoshio; Onagawa, Hiroyoshi

PATENT ASSIGNEE(S): Hokuriku Electric Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000252081	A2	20000914	JP 1999-50902	19990226
PRIORITY APPLN. INFO.:			JP 1999-50902	19990226

AB The devices typically comprise: a glass substrate having a groove array; a Cu conductor array burying the grooves; an ITO electrode stripe array (.dblvert. X); a hole injecting /transporting layer; a red, a green and a blue phosphor layer; an electron transporting layer; and an Al electrode stripe array (.dblvert. Y).

IC ICM H05B033-26

ICS H01B005-14; H05B033-14; H05B033-28

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org multicolor electroluminescent ITO aluminum device

IT Electric conductors
(org. electroluminescent devices)

IT Electrodes
(transparent; org. electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 7631-86-9, Silicon dioxide, uses 50926-11-9, ITO 51325-91-8, DCM 60676-86-0, Fused quartz 65181-78-4, TPD 123847-85-8, [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl-
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

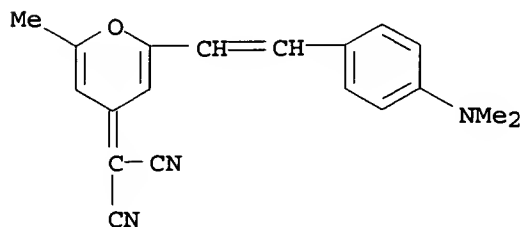
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====		
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

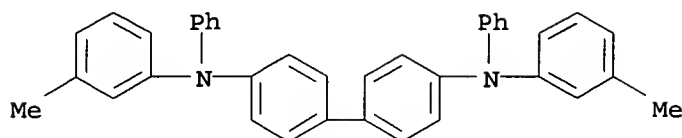
RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



L47 ANSWER 30 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:638401 CAPLUS

DOCUMENT NUMBER: 133:230123

TITLE: Organic electroluminescent devices

INVENTOR(S): Kishimoto, Yoshio

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

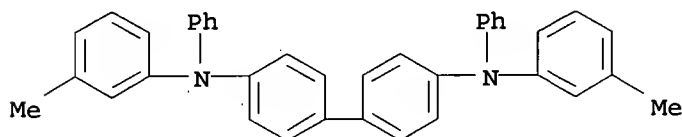
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000252077	A2	20000914	JP 1999-51152	19990226
PRIORITY APPLN. INFO.:			JP 1999-51152	19990226
AB	The devices comprise: an hole injecting electrode; a hole transport layer; an electron -transporting phosphor layer contg. hole-trapping micro holes; and an electro injecting electrode.			
IC	ICM H05B033-22 ICS H05B033-22; C09K011-06; H05B033-14			
CC	73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)			
ST	org electroluminescent hole trap phosphor			
IT	Electric charge Electroluminescent devices Glass substrates Hole traps Phosphors (org. electroluminescent devices)			
IT	147-14-8 1518-16-7 2085-33-8, Tris(8-quinolinolato)aluminum 12798-95-7 16998-91-7 24672-76-2, 9,10-Bis(4-methoxyphenyl)anthracene 50926-11-9, ITO 65181-78-4, TPD 174470-20-3 291278-81-4 RL: DEV (Device component use); USES (Uses) (org. electroluminescent devices)			
IT	50926-11-9, ITO 65181-78-4, TPD RL: DEV (Device component use); USES (Uses) (org. electroluminescent devices)			
RN	50926-11-9 CAPLUS			
CN	Indium tin oxide (9CI) (CA INDEX NAME).			

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

L47 ANSWER 31 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:624995 CAPLUS

DOCUMENT NUMBER: 133:215268

TITLE: **Organic electroluminescent devices and manufacture**

INVENTOR(S): Arai, Michio

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2000243568	A2	20000908	JP 1999-41552	19990219
PRIORITY APPLN. INFO.:			JP 1999-41552	19990219

AB The **devices** comprise: a **glass** substrate; an ITO electrode; a **hole injecting layer**; a **phosphor layer**; an inorg. **electron injecting /transporting layer** (0.1-2 nm thick) comprising a Li₂O main component and a MgO stabilizer; and a cathode.

IC ICM H05B033-22

ICS H05B033-10; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent** magnesia lithium oxide **layer**

IT Stabilizing agents

(org. electroluminescent devices and

manuf.)

IT 1309-48-4, Magnesium oxide, uses 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 12057-24-8, Lithium oxide, uses 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices and manuf.)

IT 517-51-1, Rubrene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices and manuf.)

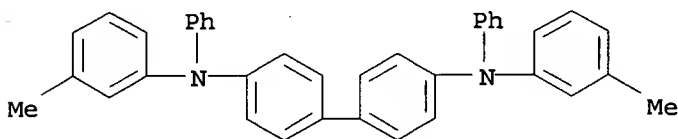
IT 7440-37-1, Argon, processes 7782-44-7, Oxygen, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (org. electroluminescent devices and manuf.)

IT 7429-90-5, Aluminum, uses 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices and manuf.)

RN 7429-90-5 CAPLUS
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

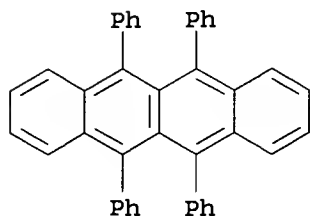
Al

RN 65181-78-4 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 517-51-1, Rubrene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices and manuf.)

RN 517-51-1 CAPLUS
 CN Naphthalene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 32 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:552963 CAPLUS

DOCUMENT NUMBER: 133:157453

TITLE: **Organic electroluminescent devices**

INVENTOR(S): Arai, Michio; Kobori, Isamu; Mitsuhashi, Etsuo

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000223274	A2	20000811	JP 1999-18904	19990127
PRIORITY APPLN. INFO.:			JP 1999-18904	19990127

AB The **devices** comprise: a **glass** substrate; a **hole injecting** ITO electrode; a 1st and a 2nd inorg. insulator **hole injecting layer** (both 0.05-10 nm thick) comprising a 1st and a 2nd (Si1-xGex)Oy having (0 .ltoreq. x .ltoreq. 1; 0 < y <1.7) and (0 .ltoreq. x .ltoreq. 1; 1.7 .ltoreq. y .ltoreq. 1.99), resp.; and a phosphor and an **electron injecting electrode layer**.

IC ICM H05B033-22
ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent device** inorg **hole injection**; **electroluminescent** silicon germanium oxide **hole injection**

IT Electric current
Electroluminescent devices
Glass substrates
Hole (electron)
Phosphors
Thermal resistance
(**org. electroluminescent devices**)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD 71747-83-6,

Aluminum 93, Lithium 7 (atomic) 160460-33-3, Silicon oxide (SiO_{1.95})
 253162-31-1, Germanium oxide (GeO_{1.96}) 253162-32-2, Germanium oxide
 silicate (Ge_{0.500.42}(SiO₃)_{0.5})

RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices)

IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

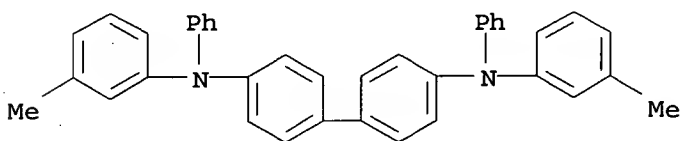
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)

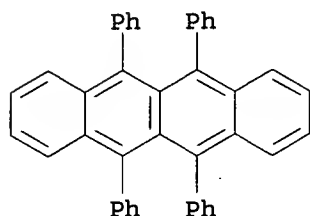


IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices)

RN 517-51-1 CAPLUS

CN Naphthacene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 33 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:552962 CAPLUS

DOCUMENT NUMBER: 133:157452

TITLE: **Organic electroluminescent devices**

INVENTOR(S): Arai, Michio; Kobori, Isamu; Mihashi, Etsuo

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000223273	A2	20000811	JP 1999-18775	19990127
EP 1030384	A1	20000823	EP 1999-305042	19990625

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: JP 1999-18775 A 19990127

AB The devices comprise: a glass substrate; a hole injecting ITO electrode; a high-resistant inorg. hole injecting 1st layer (1 - 1 x 10¹¹ .OMEGA.cm; 1-100 nm thick) comprising (Si1-xGex)Oy (0 .ltoreq. x .ltoreq. 1; 1.7 .ltoreq. y .ltoreq. 2.2); the 2nd layer comprising 0.2-40 mol % of a metal or an oxide thereof having the work function >4.5 eV; a phosphor layer; an inorg. insulator electron injection layer (0.1-2 nm thick; main component 80-99 mol %; stabilizer 1-20 mol %) comprising SrO, MgO, CaO, Rb2O, K2O, Na2O, Li2O and/or Cs2O; and an electron injecting electrode.

IC ICM H05B033-22

ICS H05B033-22; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent inorg electron hole injection

IT Electric insulators

Electroluminescent devices

Hole (electron)

Phosphors

KOROMA EIC1700

Stabilizing agents

Work function

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

IT Glass, uses

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

IT 1305-78-8, Calcium oxide (CaO), uses 1309-48-4, Magnesium oxide (MgO),

uses 1310-53-8, Germanium oxide (GeO₂), uses 1313-59-3, Sodium oxide

(Na₂O), uses 1314-11-0, Strontium oxide (SrO), uses 2085-33-8,

Tris(8-quinolinolato)aluminum 7439-88-5, Iridium, uses 7439-89-6

, Iron, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses

7440-03-1, Niobium, uses 7440-05-3, Palladium, uses

7440-06-4, Platinum, uses 7440-18-8, Ruthenium, uses

7440-22-4, Silver, uses 7440-25-7, Tantalum, uses 7440-31-5,

Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses

7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8,

Copper, uses 7440-57-5, Gold, uses 7440-74-6, Indium,

uses 7631-86-9, Silica, uses 12057-24-8, Lithium oxide (Li₂O), uses

20281-00-9, Cesium oxide (Cs₂O) 50926-11-9, ITO

65181-78-4, TPD 110986-74-8, Silicon oxide (SiO_{1.7})

115987-45-6, Silicon oxide (SiO_{1.9}) 195069-27-3, Potassium oxide (K₂O),

uses 195069-38-6, Rubidium oxide (Rb₂O) 253162-31-1, Germanium oxide

(GeO_{1.96}) 253162-32-2, Germanium oxide silicate (Ge_{0.500.42}(SiO₃)_{0.5})

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

IT 7440-37-1, Argon, reactions 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

IT 7439-89-6, Iron, uses 7440-05-3, Palladium, uses

7440-06-4, Platinum, uses 7440-22-4, Silver, uses

7440-33-7, Tungsten, uses 7440-50-8, Copper, uses

7440-57-5, Gold, uses 7440-74-6, Indium, uses

50926-11-9, ITO 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent devices contg.

inorg. electron/hole injection

layers)

RN 7439-89-6 CAPLUS

CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

RN 7440-05-3 CAPLUS
CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

RN 7440-06-4 CAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-22-4 CAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-33-7 CAPLUS
CN Tungsten (8CI, 9CI) (CA INDEX NAME)

W

RN 7440-50-8 CAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-57-5 CAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-74-6 CAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

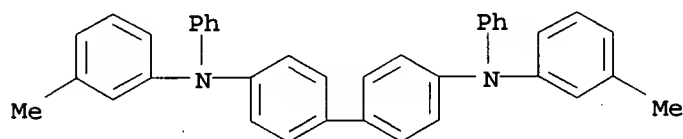
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

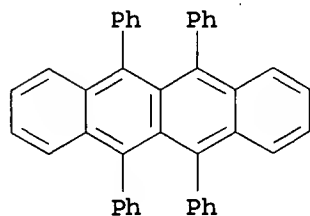


IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)
(org. electroluminescent devices contg.
inorg. electron/hole injection
layers)

RN 517-51-1 CAPLUS

CN Naphthalene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 34 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:551388 CAPLUS

DOCUMENT NUMBER: 133:170081

TITLE: Organic electroluminescent
devices

INVENTOR(S): Arai, Michio

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan

KOROMA EIC1700

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000223275	A2	20000811	JP 1999-18905	19990127
PRIORITY APPLN. INFO.:			JP 1999-18905	19990127

AB The devices comprise: a glass substrate; a hole injecting ITO electrode; an amorphous inorg. insulator layer (EPR spin d. < 1 x 10¹⁵ spins/cm²) comprising (Si_{1-x}Ge_x)O_y (0 .ltoreq. x .ltoreq. 1; 1.7 .ltoreq. y .ltoreq. 1.99); a phosphor layer; and an AlLi electron injecting electrode.

IC ICM H05B033-22
 ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescence silicon germanium oxide hole injection

IT ESR (electron spin resonance)
 Electric insulators
 Electron spin
 Glass substrates
 Hole (electron)
 Thermal resistance
 (org. electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO 65181-78-4, TPD 71747-83-6, Aluminum 93, lithium 7 (atomic) 179490-27-8, Silicon oxide (SiO_{1.91}) 202129-77-9, Silicon oxide (SiO_{1.65}) 287920-03-0, Germanium oxide (GeO_{1.95}) 287920-14-3, Germanium oxide silicate (Ge_{0.500.39}(SiO₃)_{0.5}) 287920-16-5, Silicon oxide (SiO_{1.89})
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices)

IT 517-51-1, Rubrene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices)

IT 50926-11-9, ITO 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices)

RN 50926-11-9 CAPLUS

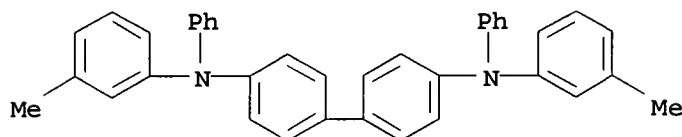
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6

Sn | x | 7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

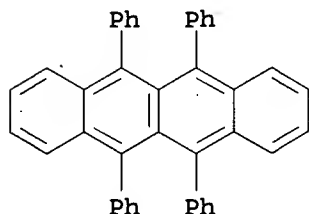


IT 517-51-1, Rubrene

RL: MOA (Modifier or additive use); USES (Uses)
(org. electroluminescent devices)

RN 517-51-1 CAPLUS

CN Naphthalene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 35 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:484421 CAPLUS

DOCUMENT NUMBER: 133:112218

TITLE: Manufacture of organic
electroluminescent devices

INVENTOR(S): Fujiomori, Shigeo; Himejima, Yoshio; Ikeda, Takeshi

PATENT ASSIGNEE(S): Toray Industries, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000200680	A2	20000718	JP 1999-1893	19990107
PRIORITY APPLN. INFO.:			JP 1999-1893	19990107

AB The manufg. process comprises the steps of: forming, on a **glass** substrate, an ITO electrode stripe array (.dblvert. X) using a shadow mask in a vapor deposition; forming a polyimide patterned, a **hole**

KOROMA EIC1700

injection and a **hole** transport **layer**; forming a red, a green and a blue phosphor patterned **layer** using a shadow mask; forming a **electron** transport **layer**; and forming an Al electrode stripe array (.dblvert. Y) using a shadow mask.

IC ICM H05B033-10

ICS G09F009-30; H05B033-14; H05B033-26

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **manuf org electroluminescent device shadow mask**

IT Electrodes

Films

Shadow masks

(prodn. method of org. elec. field luminous component)

IT Polyimides, uses

RL: **DEV (Device component use)**; **USES (Uses)**

(prodn. method of org. elec. field luminous component)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-quinolinolato)aluminum 4061-32-9 7429-90-5, Aluminum, uses 50926-11-9, ITO

RL: **DEV (Device component use)**; **USES (Uses)**

(prodn. method of org. elec. field luminous component)

IT 51325-91-8, DCM 121207-31-6, PM546

RL: **MOA (Modifier or additive use)**; **USES (Uses)**

(prodn. method of org. elec. field luminous component)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO

RL: **DEV (Device component use)**; **USES (Uses)**

(prodn. method of org. elec. field luminous component)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

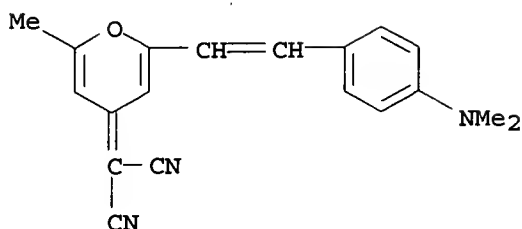
IT 51325-91-8, DCM

RL: **MOA (Modifier or additive use)**; **USES (Uses)**

(prodn. method of org. elec. field luminous component)

RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



L47 ANSWER 36 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:440439 CAPLUS

DOCUMENT NUMBER: 133:65806

TITLE: Organic electroluminescent devices

INVENTOR(S): Takayama, Koichi; Ogawa, Akio; Kawakami, Yasuyuki; Tanaka, Shinichi; Komatsu, Yuki; Jinde, Yukitoshi

PATENT ASSIGNEE(S): Stanley Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000182782	A2	20000630	JP 1998-357122	19981216
PRIORITY APPLN. INFO.:			JP 1998-357122	19981216

AB The devices comprise: a glass substrate; an ITO electrode, a hole injecting and a hole transport layer; a phosphor layer; an electron injection layer; a CaF₂ layer (.apprx. 6 .ANG. thick); and an Al electrode layer (.apprx. 1500 .ANG. thick).

IC ICM H05B033-26
ICS H01L051-00; H01L033-00; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent calcium fluoride aluminum electrode

IT Electrodes
Electroluminescent devices
Glass substrates
Phosphors
(org. electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 7789-75-5, Calcium fluoride (CaF₂), uses 50926-11-9, ITO 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

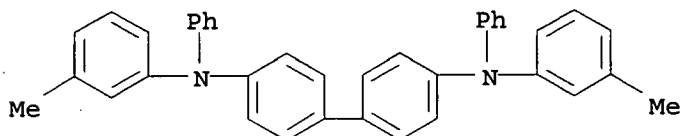
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 37 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:440434 CAPLUS

DOCUMENT NUMBER: 133:65803

TITLE: Organic electroluminescent
devices

INVENTOR(S): Suzuki, Harumi; Kido, Junji; Ishikawa, Takeshi

PATENT ASSIGNEE(S): Denso Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000182768	A2	20000630	JP 1999-245939	19990831
JP 3287344	B2	20020604		
US 6447934	B1	20020910	US 1999-414823	19991008
PRIORITY APPLN. INFO.:			JP 1998-288185 A	19981009

KOROMA EIC1700

JP 1999-245939 A 19990831

AB The **devices** comprise: (1) a **glass** substrate; (2) an ITO anode; (3) a **hole injection**, (4) a **hole** -transport phosphor, (5) an **electron-transport** phosphor, and (6) an **electron-injection layer**; and (7) a cathode, where the **luminescences** from (4) and (5) are 380-510 nm in wavelength.

IC ICM H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescence** electron hole transport phosphor

IT Anodes
Cathodes
Electric transport properties
Glass substrates
Hole (electron)
Hole transport
Luminescence, electroluminescence
Phosphors
(org. electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 16223-74-8, Copper phthalate 23467-27-8 50926-11-9, ITO 51325-91-8, DCM1 123847-85-8, [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl- 146162-54-1
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

IT 147-14-8 198-55-0, Perylene
RL: MOA (Modifier or additive use); USES (Uses)
(org. electroluminescent devices)

IT 50926-11-9, ITO 51325-91-8, DCM1
RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices)

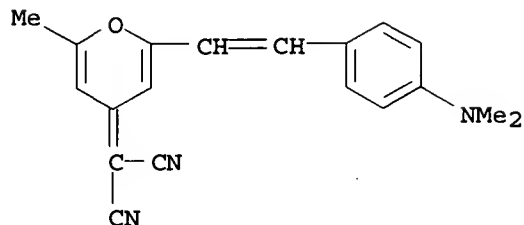
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

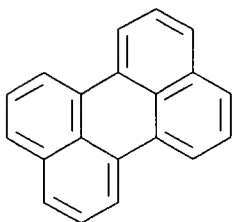
Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



IT 198-55-0, Perylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (org. electroluminescent devices)
 RN 198-55-0 CAPLUS
 CN Perylene (8CI, 9CI) (CA INDEX NAME)



L47 ANSWER 38 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000:386415 CAPLUS
 DOCUMENT NUMBER: 133:111742
 TITLE: High efficiency **organic** thin film
electroluminescent devices
 AUTHOR(S): Zhao, Wei-ming; Lee, Shu-tang; Zhang, Bu-xin; Zhu,
 Wen-qing; Jiang, Xue-yin; Zhang, Zhi-lin; Xu,
 Shao-hong
 CORPORATE SOURCE: School of Materials Science and Engineering, Shanghai
 University, Shanghai, 201800, Peop. Rep. China
 SOURCE: Faguang Xuebao (2000), 21(1), 81-83
 CODEN: FAXUEW; ISSN: 1000-7032
 PUBLISHER: Kexue Chubanshe
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB The operating mechanisms of the **org.** LEDs (OLEDs) involve
injection of **electrons** and **holes** from the
 electrodes, and **electron-hole** recombination which
 emits the light. To balance the nos. of **electrons** and
holes injected from electrode and obtain high emission
 efficiency, several **hole injecting** buffer
layers such as CuPc, C, Al₂O₃ and SiO₂ were used to improve the
 efficiency and lifetime of the OLEDs. Highly efficient and bright
org. electroluminescent devices were developed

using LiF film as hole and electron injecting layers. Typical OLEDs have the structure of ITO glass /LiF/NPB(70 nm)/Alq(70 nm)/LiF(0.5 nm)/Al(200 nm). The device with a 2.0 nm LiF hole injecting layer showed the luminance of 1210 cd/m² at 20 mA/cm² which corresponds to an efficiency of 6.0 cd/A. But the device without LiF hole injecting layer exhibited 617 cd/m² at the same c.d. which showed an efficiency of 3.2 cd/A. Probably the LiF hole injecting layer with a proper thickness can enhance the efficiency of the OLEDs due to blocking the injection of holes.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 76

ST org film electroluminescent device

IT Electroluminescent devices

(high efficiency org. film)

IT Electron-hole recombination

(in high efficiency org. film electroluminescent devices)

IT 147-14-8, Copper phthalocyanine 1344-28-1, Alumina, uses

2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5,

Aluminum, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses

7789-24-4, Lithium fluoride, uses 123847-85-8, NPB

RL: DEV (Device component use); USES (Uses)

(high efficiency org. film electroluminescent devices contg.)

IT 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses

RL: DEV (Device component use); USES (Uses)

(high efficiency org. film electroluminescent devices contg.)

RN 1344-28-1 CAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

L47 ANSWER 39 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:259909 CAPLUS

DOCUMENT NUMBER: 132:271539

TITLE: Organic electroluminescent

device which has an extended life, weather resistance, high stability, and high efficiency, and is inexpensive

INVENTOR(S): Arai, Michio; Kobori, Isamu; Mitsuhashi, Etsuo

PATENT ASSIGNEE(S): TDK Corporation, Japan

KOROMA EIC1700

SOURCE: Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 994517	A2	20000419	EP 1999-305041	19990625
EP 994517	A3	20000802		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2000123976	A2	20000428	JP 1998-303350	19981009
US 6303239	B1	20011016	US 1999-241284	19990201

PRIORITY APPLN. INFO.: JP 1998-303350 A 19981009

AB An object of the invention is to achieve an **org. EL device** which has an extended life, weather resistance, high stability, and high efficiency, and is inexpensive as well. This object is accomplished by the provision of an **org. EL device** comprising a substrate, a pair of a **hole injecting** electrode and a cathode formed on the substrate, and an **org. layer** located between these electrodes and taking part in at least a light emission function, wherein between the **org. layer** and the cathode there is provided an inorg. insulating **electron injecting** and transporting **layer** comprising a first component comprising at least one oxide selected from the group consisting of lithium oxide, rubidium oxide, potassium oxide, sodium oxide and cesium oxide, a second component comprising at least one oxide selected from the group consisting of strontium oxide, magnesium oxide and calcium oxide, and a third component comprising silicon oxide and/or germanium oxide.

IC ICM H01L051-20

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST cathode **org. electroluminescent** app

IT Cathodes

Electronic device fabrication

Glass substrates

(fabrication of **org. electroluminescent device**)

IT Alkali metal oxides

Alkaline earth oxides

RL: DEV (Device component use); USES (Uses)

(fabrication of **org. electroluminescent device**)

IT Electroluminescent devices

(**org.**; fabrication of **org.**

electroluminescent device)

IT 517-51-1, Rubrene 1305-78-8, Calcium oxide, uses 1309-48-4,

Magnesia, uses 1310-53-8, Germania, uses 1313-59-3, Sodium oxide, uses

1314-11-0, Strontium oxide, uses 2085-33-8, Tris(8-

quinolinolato)aluminum 7429-90-5, Aluminum, uses 7439-98-7,
Molybdenum, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium,
uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses
7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses
7440-50-8, Copper, uses 7440-57-5, Gold, uses
7440-74-6, Indium, uses 7631-86-9, Silica, uses 12057-24-8,
Lithium oxide, uses 12136-45-7, Potassium oxide, uses 18088-11-4,
Rubidium oxide 20281-00-9, Cesium oxide 25233-34-5,
Polythiophene 50926-11-9, ITO

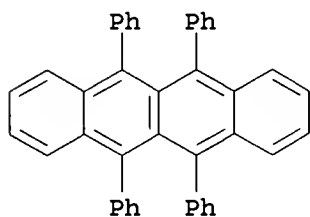
RL: DEV (Device component use); USES (Uses)
(fabrication of org. electroluminescent
device)

IT 517-51-1, Rubrene 7429-90-5, Aluminum, uses
7440-05-3, Palladium, uses 7440-06-4, Platinum, uses
7440-22-4, Silver, uses 7440-33-7, Tungsten, uses
7440-50-8, Copper, uses 7440-57-5, Gold, uses
7440-74-6, Indium, uses 25233-34-5, Polythiophene
50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)
(fabrication of org. electroluminescent
device)

RN 517-51-1 CAPLUS

CN Naphthacene, 5,6,11,12-tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7440-05-3 CAPLUS

CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

RN 7440-06-4 CAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-22-4 CAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-33-7 CAPLUS
CN Tungsten (8CI, 9CI) (CA INDEX NAME)

W

RN 7440-50-8 CAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-57-5 CAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-74-6 CAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RN 25233-34-5 CAPLUS
CN Thiophene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 110-02-1

CMF C4 H4 S



RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 40 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:126876 CAPLUS

DOCUMENT NUMBER: 132:308923

TITLE: **Organic electroluminescent devices** based on polyurethane derivatives: effects of substituents on **electroluminescent** and photoluminescent properties

AUTHOR(S): Lim, Hyuntaek; Noh, Jy Young; Lee, Gyu Hyun; Lee, Sung Eun; Jeong, Hyein; Lee, Kwanghee; Cha, Myoungsik; Suh, Hongduk; Ha, Chang-Sik

CORPORATE SOURCE: Department of Polymer Science & Engineering, Pusan National University, Pusan, S. Korea

SOURCE: Thin Solid Films (2000), 363(1,2), 152-155
 CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyurethane (PU) derivs. with different lumophore pendants, contg. stilbene and 4-(dicyanomethylened)-2-methyl-6-(4-dimethylaminostyryl)-4H-pyran moieties, were prep'd. A soln. blend of N,N'-diphenyl-N,N'-di(m-tolyl)benzidine (TPD, photosensitizer) and poly(4,4'-oxydiphenylene pyromellitimide) PMDA-ODA polyamic acid in DMF was spin-coated onto an ITO-glass substrate as anode, soft-baked at 80.degree. for 30 min and thermally imidized at 180.degree. for 1 h; the functionalized PU was spin-coated onto the polyimide film, and Al was thermally evap'd. to form a cathode. The current-voltage, **electroluminescence** intensity, luminance, and photoluminescence spectra of the assemblies were measured, under ambient temp. conditions. The shape of charge **injection** shows typical diode characteristics, rectification and recombination of **holes** and **electrons injected** from anode to cathode. The activation energy of charge transfer indicate that most **electrons injected** into the polyimide **hole transport layer** and the polyurethane emitting **layer** participate in the radiative recombination process. The **electroluminescence** spectra max. correspond to those of the lumophore pendant moieties.

CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 76

ST polyurethane stilbene pendant group prepn **electroluminescence**; cyanomethylene methylaminostyrylpyran substituted polyurethane prepn photoluminescence; polyimide hole transport polyurethane emitter

- electroluminescent device**
- IT Electric rectification
 - Electroluminescent devices**
 - Electron-hole recombination
 - Luminescence, electroluminescence**
 - Photoinduced electron transfer
 - Radiative recombination
 - (**electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT Polyamic acids
 - RL: PEP (Physical, engineering or chemical process); PROC (Process)
 - (**electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT Polyurethanes, properties
 - Polyurethanes, properties
 - RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
 - (polyamine-; **electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT Polyamines
 - Polyamines
 - RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
 - (polyurethane-; **electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT Polyimides, processes
 - RL: PEP (Physical, engineering or chemical process); PROC (Process)
 - (pyromellitic dianhydride-oxydianiline-based; **electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT Coating process
 - (spin; **electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT 50926-11-9, Indium tin oxide
 - RL: DEV (Device component use); USES (Uses)
 - (anode; **electroluminescence** and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of **electroluminescent devices**)
- IT 7429-90-5, Aluminum, uses

RL: DEV (Device component use); USES (Uses)

(cathode; electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

IT 25036-53-7, Oxydianiline-pyromellitic dianhydride copolymer, sru
25038-81-7, Oxydianiline-pyromellitic dianhydride copolymer

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

IT 247122-69-6, 4-Cyano-4'-[bis(2-hydroxyethyl)amino]stilbene-2,4-TDI copolymer 247151-65-1, 4-Cyano-4'-[bis(2-hydroxyethyl)amino]stilbene-2,4-TDI copolymer, SRU 264919-62-2 265115-57-9

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

IT 9043-05-4, 4,4'-Oxydianiline-pyromellitic dianhydride polymer, polyamic acid SRU

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

IT 65181-78-4, N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(photosensitizer; electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

IT 50926-11-9, Indium tin oxide

RL: DEV (Device component use); USES (Uses)

(anode; electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 7429-90-5, Aluminum, uses
 RL: DEV (Device component use); USES (Uses)
 (cathode; electroluminescence and charge transport of emitter
 layer of lumophore-contg. polyurethane and polyimide hole
 transport layer of electroluminescent
 devices)
 RN 7429-90-5 CAPLUS
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

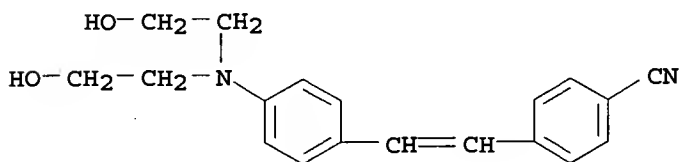
Al

IT 247122-69-6, 4-Cyano-4'-[bis(2-hydroxyethyl)amino]stilbene-2,4-TDI
 copolymer 264919-62-2
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PRP (Properties); PROC (Process); USES (Uses)
 (electroluminescence and charge transport of emitter
 layer of lumophore-contg. polyurethane and polyimide hole
 transport layer of electroluminescent
 devices)
 RN 247122-69-6 CAPLUS
 CN Benzonitrile, 4-[2-[4-[bis(2-hydroxyethyl)amino]phenyl]ethenyl]-, polymer
 with 2,4-diisocyanato-1-methylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 127122-67-2

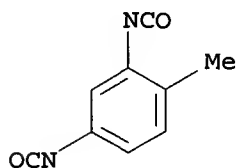
CMF C19 H20 N2 O2



CM 2

CRN 584-84-9

CMF C9 H6 N2 O2



KOROMA EIC1700

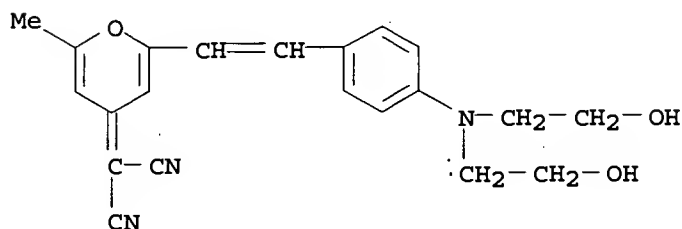
RN 264919-62-2 CAPLUS

CN Propanedinitrile, [2-[2-[4-[bis(2-hydroxyethyl)amino]phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]-, polymer with 2,4-diisocyanato-1-methylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 119438-04-9

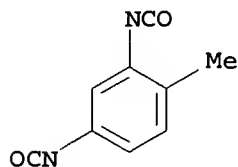
CMF C21 H21 N3 O3



CM 2

CRN 584-84-9

CMF C9 H6 N2 O2



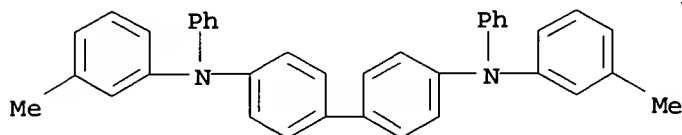
IT 65181-78-4, N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(photosensitizer; electroluminescence and charge transport of emitter layer of lumophore-contg. polyurethane and polyimide hole transport layer of electroluminescent devices)

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



KOROMA EIC1700

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 41 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1999:688956 CAPLUS
 DOCUMENT NUMBER: 131:305008
 TITLE: Organic electroluminescent devices and manufacture thereof
 INVENTOR(S): Hori, Yoshikazu; Fukuyama, Masao; Suzuki, Mutsumi
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11297476	A2	19991029	JP 1998-102339	19980414
PRIORITY APPLN. INFO.:			JP 1998-102339	19980414
AB The devices comprise: a 1st glass substrate; an ITO hole-injecting electrode; a SiO ₂ layer having micro-hole arrays; a TPD hole transport layer; a tris(8-quinolinolato)aluminum phosphor layer; a AgMg electron-injecting electrode; a SiO ₂ protective layer; a UV-cured resin layer; and a 2nd glass substrate.				
IC ICM H05B033-22				
ICS H05B033-10; H05B033-14				
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				
ST electroluminescent quinolinolato aluminum phosphor TPD hole transport				
IT Electroluminescent devices				
Glass substrates				
Hole transport				
Phosphors				
(org. electroluminescent devices and manuf.)				
IT Resins				
RL: DEV (Device component use); USES (Uses)				
(org. electroluminescent devices and manuf.)				
IT 2085-33-8, Tris(8-quinolinolato)aluminum 37271-44-6 50926-11-9				
, ITO 65181-78-4, TPD				
RL: DEV (Device component use); USES (Uses)				
(org. electroluminescent devices and manuf.)				
IT 50926-11-9, ITO 65181-78-4, TPD				
RL: DEV (Device component use); USES (Uses)				

(org. electroluminescent devices and
manuf.)

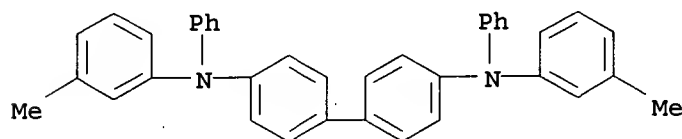
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 42 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:610820 CAPLUS

DOCUMENT NUMBER: 131:250197

TITLE: Organic thin film electroluminescent

device with high luminance and its manufacture

INVENTOR(S): Sato, Tetsuya; Hisada, Hitoshi; Matsuo, Mikiko;
Sugiura, Hisanori; Kawase, Toru; Murakami, Yoshinobu

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

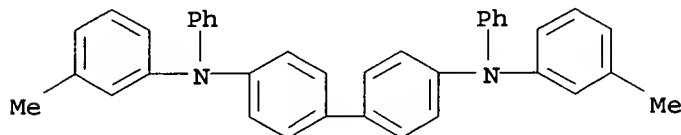
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 11260559	A2	19990924	JP 1998-59404	19980311
PRIORITY APPLN. INFO.:			JP 1998-59404	19980311
OTHER SOURCE(S):	MARPAT 131:250197			
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

- AB The device has a pos.-hole transporting layer between an electron-injecting electrode and a pos.-hole injecting electrode on a transparent substrate, in which the transporting layer contains more than two kinds of pos.-hole transporting materials with an asym. mol. structure. The transporting layer may contain a bisdiphenylamino deriv. I (R1-3 = H, lower alkyl, lower alkoxy; R4, 5 = H, lower alkyl, lower alkoxy, Cl). The transporting layer may contain the deriv. as a host compd. and a guest compd. II, III, or IV (R6-9 = H, lower alkyl, lower alkoxy; R10-13 = H, Cl, Me, methoxy, dimethylamino, diethylamino, diphenylamino, dibenzylamino; R14, 15 = H, lower alkyl, lower alkoxy, aryl; R16 = H, lower alkyl, lower alkoxy, Cl). The device is useful for a flat-type self-emitting light source. The device with high luminance with efficiency in repeated use is manufd. by the method.
- IC ICM H05B033-22
ICS C09K011-06; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST electroluminescent device pos hole transporting material; asym structure hole transporting EL device
- IT Electroluminescent devices
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- IT 62896-28-0P
RL: DEV (Device component use); IMF (Industrial manufacture);
MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- IT 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 109995-82-6, 1,1-Bis(p-diethylaminophenyl)-4,4-diphenyl-1,3-butadiene 167218-46-4
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- IT 78-40-0, Ethyl phosphate 776-74-9, Diphenylbromo methane 4181-05-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- IT 32636-65-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- IT 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(manuf. of electroluminescent device contg. pos.-hole transporting material)
- RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 43 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:571863 CAPLUS

DOCUMENT NUMBER: 131:177167

TITLE: Organic light emitting diode having thin insulating layer

INVENTOR(S): Kim, Jang-Joo; Park, Heuk

PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute,
S. Korea

SOURCE: U.S., 5 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 5949089	A	19990907	US 1997-840280	19970414
PRIORITY APPLN. INFO.:			KR 1996-14060	19960430

AB Org. light-emitting diodes comprising a lower electrode disposed on a glass substrate; an upper electrode; an emitting layer disposed between the lower electrode and the upper electrode, and an insulating layer comprising poly(Me methacrylate) disposed between the emitting layer and either the upper or lower electrode are described in which the insulating layer is sufficiently thin that, when a voltage is applied to the upper and lower electrodes, tunneling in the insulating layer occurs to balance the injection of electrons and holes into the emitting layer, and electrons and holes enter the emitting layer so that light is emitted.

IC ICM H01L033-00

NCL 257040000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST org light emitting diode thin insulator

IT Electroluminescent devices

Electroluminescent devices

(org. light-emitting diodes with thin insulating layers)

IT 7429-90-5, Aluminum., uses 50926-11-9, Indium-tin-oxide
 RL: DEV (Device component use); USES (Uses)
 (electrode; org. light-emitting diodes with thin insulating layers)

IT 133030-00-9, Poly(2-methoxy-5-(2'-ethylhexoxy)-1,4-phenylenevinylene)
 RL: DEV (Device component use); USES (Uses)
 (emitting layer; org. light-emitting diodes with thin insulating layers)

IT 9011-14-7, Poly-methyl-methacrylate
 RL: DEV (Device component use); USES (Uses)
 (org. light-emitting diodes with thin insulating layers)

IT 7429-90-5, Aluminum., uses 50926-11-9, Indium-tin-oxide
 RL: DEV (Device component use); USES (Uses)
 (electrode; org. light-emitting diodes with thin insulating layers)

RN 7429-90-5 CAPLUS
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

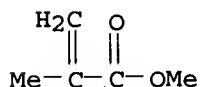
Component	Ratio	Component Registry Number
-----	-----	-----
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 9011-14-7, Poly-methyl-methacrylate
 RL: DEV (Device component use); USES (Uses)
 (org. light-emitting diodes with thin insulating layers)

RN 9011-14-7 CAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 44 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:490402 CAPLUS

DOCUMENT NUMBER: 131:163450

TITLE: Injection-type electroluminescent device and manufacture of the device

INVENTOR(S): Kishimoto, Yoshio

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11214149	A2	19990806	JP 1998-9388	19980121
PRIORITY APPLN. INFO.:			JP 1998-9388	19980121

AB The device has a transparent substrate, a pos. hole-injecting transparent electrode, an electron-injecting thin film alloy electrode contg. alkali metals or alk. earth metals, and an electron-transporting org. mol. layer and/or a pos. hole-transporting org. mol. layer between the above 2 electrodes and the substrate is a glass plate having hydrophobic surface formed by chem. modification under hot wet condition after formation of the pos. hole-injecting electrode. The device is manufd. by a process including chem. modification of the glass substrate in a gas contg. a reactive gas, which is prepd. by bubbling the gas into a liq., at .gtoreq.200.degree.. The above org. mol. layers may be partially crosslinked and polymd. by using a crosslinkable gas. The both sides of the electron-injecting electrode may have alkali metal salts or alk. earth metal salts formed by using an acidic gas. The device is suitable for light-emitting display, field-emission display, etc.

IC ICM H05B033-02
ICS H05B033-10; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

ST injection type electroluminescent device display; transparent glass substrate hydrophobic surface; chem modification glass wet hot condition; electron hole transporting org mol layer; crosslinked org mol layer electroluminescent device; alkali metal alloy electrode salt surface; alk earth metal alloy electrode salt

IT Alkali metals, uses
Alkaline earth metals
RL: TEM (Technical or engineered material use); USES (Uses)
(alloy, electrode; in injection-type electroluminescent

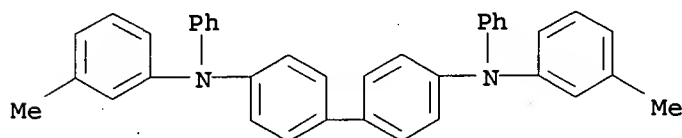
- device having glass transparent substrate with chem. modified hydrophobic surface)**
- IT Peroxides, uses
Sulfides, uses
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking of **org. mol. layers** in injection-type **electroluminescent device** by)
- IT **Electroluminescent devices**
Transparent materials
(injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- IT **Glass, processes**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- IT Halogens
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(injection-type **electroluminescent device** having metal alloy electrode having salt on surface formed by)
- IT Crosslinking
Polymerization
(of **org. mol. layers** in injection-type **electroluminescent device**)
- IT 50-00-0, Formaldehyde, uses 7446-09-5, Sulfur oxide, uses 10028-15-6, Ozone, uses
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking of **org. mol. layers** in injection-type **electroluminescent device** by)
- IT 12686-52-1 58361-82-3 76776-68-6 92840-39-6
RL: TEM (Technical or engineered material use); USES (Uses)
(electrode; in injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- IT 7631-86-9, Silica, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(hydrophobic surface; injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- IT 123-31-9D, 1,4-Benzenediol, complex with zinc, uses 2085-33-8
7440-66-6D, Zinc, complex with hydroxybenzoquinolinole, uses 65181-78-4, TPD
RL: TEM (Technical or engineered material use); USES (Uses)
(in injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- IT 1333-74-0, Hydrogen, processes 7664-39-3, Hydrofluoric acid, processes 7732-18-5, Water, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(injection-type **electroluminescent device** having

glass transparent substrate with chem.
modified hydrophobic surface using)

- IT 554-13-2, Lithium carbonate 7775-41-9, Silver fluoride 7784-18-1, Aluminum trifluoride 7789-24-4, Lithium fluoride, processes 7789-75-5, Calcium fluoride, processes 10377-51-2, Lithium iodide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(injection-type **electroluminescent device** having metal alloy electrode having salt)
- IT 64-19-7, Acetic acid, processes 124-38-9, Carbon dioxide, processes 7553-56-2, Iodine, processes 7782-41-4, Fluorine, processes 11104-93-1, Nitrogen oxide, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(injection-type **electroluminescent device** having metal alloy electrode having salt on surface formed by)
- IT 7440-66-6D, Zinc, complex with hydroxybenzoquinolinole, uses 65181-78-4, TPD
RL: TEM (Technical or engineered material use); USES (Uses)
(in injection-type **electroluminescent device** having **glass transparent substrate** with chem. modified hydrophobic surface)
- RN 7440-66-6 CAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

- RN 65181-78-4 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



L47 ANSWER 45 OF 58 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:147267 CAPLUS
DOCUMENT NUMBER: 130:189145
TITLE: Method of manufacturing **organic/polymer electroluminescent device**
INVENTOR(S): Zyung, Taehyoung; Jung, Sang-don; Choi, Kang-hoon
PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute, S. Korea
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent

KOROMA EIC1700

LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5876786	A	19990302	US 1997-919929	19970828
PRIORITY APPLN. INFO.:			KR 1996-35936	19960828

AB Methods of manufg. **electroluminescent devices** are described which entail prep. a **transparent substrate**; depositing a **transparent layer** on the **substrate**; forming a plurality of **transparent electrodes** on selected portions of the substrate by patterning the **layer**; depositing a first film comprising a first charge transfer material on the resulting structure; depositing an **emissive layer** on the first film; depositing a second film comprising a second charge transfer material on the **emissive layer**; depositing a **metal layer** on the second film; and forming a plurality of **metal electrodes** on selected portions of the second film by patterning the **metal layer**. Forming the film consisting of a charge transfer complex or charge transfer salt between the **org./polymer electroluminescent layer** and **electrodes** for **injecting electrons** and **holes** increases the **electroluminescent** quantum efficiency.

IC ICM B05D005-06
 NCL 427064000
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
 ST **org electroluminescent device** fabrication;
 polymer **electroluminescent device** fabrication
 IT Semiconductor **device** fabrication
 (**electroluminescent devices**; **org./polymer electroluminescent device** fabrication)
 IT Phosphors
 (**electroluminescent**, **polymeric**; **org./polymer electroluminescent device** fabrication)
 IT **Electroluminescent devices**
 (**org./polymer electroluminescent device** fabrication)
 IT 50926-11-9, Indium tin oxide
 RL: **DEV (Device component use)**; **USES (Uses)**
 (**electrode**; **org./polymer electroluminescent device** fabrication)
 IT 193-44-2, Tetrathiatetracene 198-55-0, Perylene. 1518-16-7,
 7,7,8,8,-Tetracyano-p-quinodimethane 31366-25-3, Tetrathiafulvalene
 54627-88-2, 1-Methyl-1,4-dithianium 55259-49-9,
 Tetramethyltetraselenafulvalene 62025-91-6D, metal compds. with
 tetra-n-butylammonium 66946-48-3, Bis(ethylenedithio)-tetrathiafulvalene
 98507-06-3 101683-17-4 118148-29-1 120120-58-3
 RL: **DEV (Device component use)**; **PEP (Physical, engineering or chemical process)**; **PROC (Process)**; **USES (Uses)**

(org./polymer electroluminescent device
fabrication)

IT 50926-11-9, Indium tin oxide

RL: DEV (Device component use); USES (Uses)
(electrode; org./polymer electroluminescent
device fabrication)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

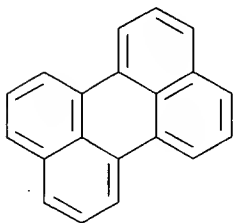
Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 198-55-0, Perylene.

RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PROC (Process); USES (Uses)
(org./polymer electroluminescent device
fabrication)

RN 198-55-0 CAPLUS

CN Perylene (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 46 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:55114 CAPLUS

DOCUMENT NUMBER: 130:189080

TITLE: Organic electroluminescence of
perylene-dispersed polyimide thin film device

AUTHOR(S): Park, Hyunjoo; Lim, Hyuntaek; Kim, Youngkyoo; Cho, Won
Jei; Ha, Chang Sik

CORPORATE SOURCE: Dept. of Polym. Sci. and Eng., Pusan Nat. Univ.,
Pusan, 609-735, S. Korea

SOURCE: Molecular Crystals and Liquid Crystals Science and
Technology, Section A: Molecular Crystals and Liquid
Crystals (1998), 316, 265-268
CODEN: MCLCE9; ISSN: 1058-725X

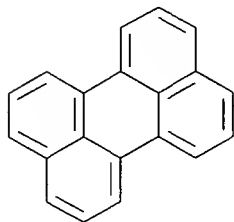
PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

- AB Two types of **org. electroluminescent devices** (OELDs) using perylene-dispersed polyimide as a lumophore and N,N'-diphenyl-N,N'-di(m-tolyl)benzidine (TPD) as **hole** transport material, were fabricated. The polyimides are bisphenol A-4-nitrophthalic anhydride-1,3-phenylene diamine copolymer and 4,4'-oxydiphenylene pyromellitic acid (PMDA-ODA) imidized at 200.degree.. One is single **polymeric layer device** in a structure of ITO-glass anode/perylene-dispersed polyimide/Al cathode, the other is double **polymeric layer** of anode/**hole** transport material-dispersed polyimide/perylene-dispersed polyimide/cathode. The turn-on voltage of the single and double **layer devices** was ca. 5 Vdc and 9 Vdc, resp. The emission color was yellowish green. The double **layer device** was more efficient than the single **layer device** due to the balanced **injection** of holes and electrons in spite of the relatively high driving voltage.
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
- ST perylene lumophore polyimide **electroluminescent device** efficiency; phenylbenzidine hole transport perylene polyimide **electroluminescent device**; excimer formation perylene dispersion polyetherimide
- IT Hole transport
Luminescence, electroluminescence
(**electroluminescence** efficiency of polyimide-dispersed perylene as lumophore in thin film OELD **devices**)
- IT Polyoxyarylenes
Polyoxyarylenes
RL: DEV (Device component use); USES (Uses)
(polyimide-; **electroluminescence** efficiency of polyimide-dispersed perylene as lumophore in thin film OELD **devices**)
- IT Polyimides, uses
Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(polyoxyarylene-; **electroluminescence** efficiency of polyimide-dispersed perylene as lumophore in thin film OELD **devices**)
- IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(pyromellitic dianhydride-oxydianiline-based; **electroluminescence** efficiency of polyimide-dispersed perylene as lumophore in thin film OELD **devices**)
- IT **Electroluminescent devices**
(thin-film; **electroluminescence** efficiency of polyimide-dispersed perylene as lumophore in thin film OELD **devices**)
- IT 198-55-0, Perylene 7429-90-5, Aluminum, uses
25036-53-7, Oxydianiline-pyromellitic dianhydride copolymer, sru
25038-81-7, Oxydianiline-pyromellitic dianhydride copolymer

50926-11-9, Indium tin oxide 61601-72-7
 RL: DEV (Device component use); USES (Uses)
 (electroluminescence efficiency of polyimide-dispersed
 perylene as lumophore in thin film OLED devices)
 IT 9043-05-4, 4,4'-Oxydianiline-pyromellitic dianhydride polymer, polyamic
 acid SRU
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (electroluminescence efficiency of polyimide-dispersed
 perylene as lumophore in thin film OLED devices)
 IT 65181-78-4, N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine
 RL: DEV (Device component use); USES (Uses)
 (hole transport material; electroluminescence efficiency of
 polyimide-dispersed perylene as lumophore in thin film OLED
 devices)
 IT 198-55-0, Perylene 7429-90-5, Aluminum, uses
 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (electroluminescence efficiency of polyimide-dispersed
 perylene as lumophore in thin film OLED devices)
 RN 198-55-0 CAPLUS
 CN Perylene (8CI, 9CI) (CA INDEX NAME)



RN 7429-90-5 CAPLUS
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

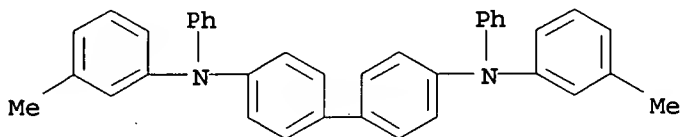
Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 65181-78-4, N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine
 RL: DEV (Device component use); USES (Uses)
 (hole transport material; electroluminescence efficiency of

polyimide-dispersed perylene as lumophore in thin film OLED
devices)

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 47 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:480508 CAPLUS

DOCUMENT NUMBER: 129:323581

TITLE: Development of durable **organic electroluminescent devices** using
thermally stable polymers

AUTHOR(S): Kido, Junji

CORPORATE SOURCE: Graduate School Engineering, Yamagata University,
Japan

SOURCE: Asahi Garasu Zaidan Josei Kenkyu Seika Hokoku
[Electronic Publication] (1997) No pp. given
CODEN: AGSHEN; ISSN: 0919-9179
URL: <http://www.af-info.or.jp/JPN/subsidy/report2/1998/body/97A-C07-P034.TXT>

PUBLISHER: Asahi Garasu Zaidan

DOCUMENT TYPE: Journal; (online computer file)

LANGUAGE: Japanese

AB Thermally stable triphenylamine-contg. poly(methacrylamide)s were
synthesized and used as hole transport layers in
org. electroluminescent (EL) devices

. Using an **electron**-transporting aluminum complex (Alq) as an
emitter layer, double-layer-type **EL devices** having a structure of glass substrate/indium tin
oxide/Polymer/Alq/Mg:Ag were fabricated. **Hole injection**
from the electrode through the polymer layer to the Alq
layer and concomitant **electroluminescence** from the Alq
layer were obsd. Bright green light was obsd. from the
devices at low drive voltages.

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)

Section cross-reference(s): 38, 76

ST **electroluminescent device** triphenylamine
methacrylamide polymer; **hole injecting layer**
triphenylamine methacrylamide polymer

IT **Electroluminescent devices**

(durable org. electroluminescent devices
using thermally stable polymers)

IT 2085-33-8, Tris(8-hydroxyquinolino)aluminum 11099-20-0
50926-11-9, Indium tin oxide 172044-96-1
RL: DEV (Device component use); USES (Uses)
(durable org. electroluminescent devices
using thermally stable polymers)

IT 163684-76-2P
RL: DEV (Device component use); SPN (Synthetic preparation);
PREP (Preparation); USES (Uses)
(durable org. electroluminescent devices
using thermally stable polymers)

IT 50926-11-9, Indium tin oxide 172044-96-1
RL: DEV (Device component use); USES (Uses)
(durable org. electroluminescent devices
using thermally stable polymers)

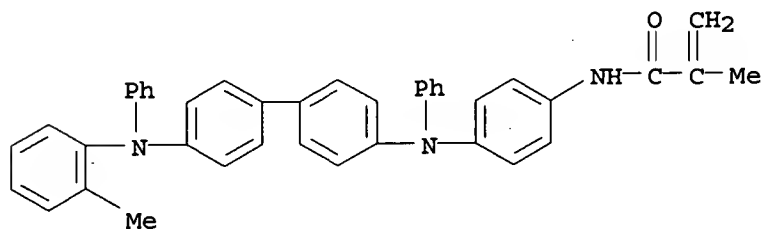
RN 50926-11-9 CAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 172044-96-1 CAPLUS
CN 2-Propenamide, 2-methyl-N-[4-[[4'-[(2-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 172044-95-0
CMF C41 H35 N3 O



IT 163684-76-2P
RL: DEV (Device component use); SPN (Synthetic preparation);
PREP (Preparation); USES (Uses)
(durable org. electroluminescent devices
using thermally stable polymers)

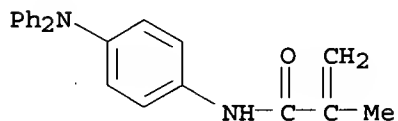
RN 163684-76-2 CAPLUS
CN 2-Propenamide, N-[4-(diphenylamino)phenyl]-2-methyl-, homopolymer (9CI)

(CA INDEX NAME)

CM 1

CRN 163684-75-1

CMF C22 H20 N2 O



L47 ANSWER 48 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:115580 CAPLUS

DOCUMENT NUMBER: 128:198497

TITLE: **Organic electroluminescent device elements**

INVENTOR(S): Gyotoku, Akira; Iwanaga, Hideaki; Hara, Shintaro; Komatsu, Takahiro

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10041067	A2	19980213	JP 1996-194277	19960724
US 6195142	B1	20010227	US 1996-773732	19961224
PRIORITY APPLN. INFO.:			JP 1995-342827	A 19951228
			JP 1996-194277	A 19960724
			JP 1996-230022	A 19960830

AB The elements comprise a **hole injection**, a **phosphor**, an **electron injection**, a **protective** and a **glass cap layer**, where the **protective layer** forming a barrier for moisture and O₂ comprises a laminate contg. an insulating inner layer.

IC ICM H05B033-04

ICS H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **org electroluminescent ALQ TPD epoxy device**IT **Electroluminescent devices**

(org. electroluminescent device elements)

IT Epoxy resins, uses

RL: DEV (Device component use); USES (Uses)

(org. electroluminescent device elements)

KOROMA EIC1700

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7440-22-4, Silver, uses
 12798-95-7 20619-16-3, Germanium oxide (GeO) 50926-11-9, ITO
 65181-78-4, Tpd
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent device elements)

IT 7440-22-4, Silver, uses 50926-11-9, ITO
 65181-78-4, Tpd
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent device elements)

RN 7440-22-4 CAPLUS

CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

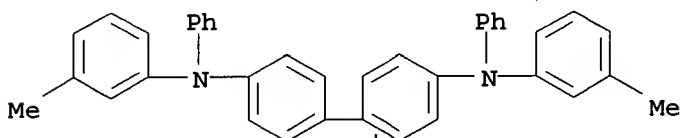
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



L47 ANSWER 49 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:760090 CAPLUS

DOCUMENT NUMBER: 128:62207

TITLE: Aromatic polyethers with 1,3,5-triazine units as hole blocking/electron transport materials in LEDs

AUTHOR(S): Fink, Ralf; Frenz, Carsten; Thelakkat, Mukundan; Schmidt, Hans Werner

CORPORATE SOURCE: Bayreuther Inst. Makromolekueelforschung, Univ. Bayreuth, Bayreuth, D-95440, Germany

SOURCE: Macromolecular Symposia (1998), 125(Organic Light-Emitting Materials and Devices), 151-155
 CODEN: MSYMEC; ISSN: 1022-1360

PUBLISHER: Huethig & Wepf Verlag

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Various difluoro-functionalized arom. 1,3,5-triazine monomers were prepd. A series of poly-(1,3,5-triazine-ether)s was synthesized by polycondensation with 4,4'-(hexafluoroisopropylidene)diphenol. The polymers have excellent thermal stability and are amorphous with glass transition temps. of 190-250.degree.. In order to examine the potential to apply these polymers in org. electroluminescent devices, the redox properties were studied by cyclic voltammetry. It was found that the monomers have high electron affinity and reach LUMO values in the range of -2.7 to -3.1 eV. This opens the possibility to utilize 1,3,5-triazine-contg. materials as electron injecting/hole blocking layer in LEDs. First LED results are in accordance to these high electron affinities.

CC 37-5 (Plastics Manufacture and Processing)
 Section cross-reference(s): 73

ST triazine monomer electron affinity polymer LED; polytriazine polyether electron transport LED

IT Poly(arylenealkenylenes)
 RL: DEV (Device component use); USES (Uses)
 (LED layer; prepn. and properties of triazine monomers and copolymers usable as electron injection material for LEDs)

IT Polyethers, preparation
 Polyethers, preparation
 Polyethers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polycyanurate-, fluorine-contg.; prepn. and properties of triazine monomers and copolymers usable as electron injection material for LEDs)

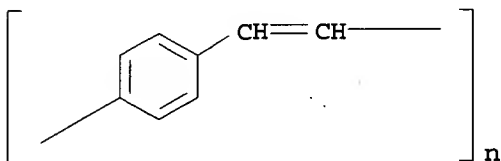
IT Polycyanurates
 Polycyanurates
 Polycyanurates
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyether-, fluorine-contg.; prepn. and properties of triazine monomers and copolymers usable as electron injection material for LEDs)

IT Fluoropolymers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyether-polycyanurate-; prepn. and properties of triazine monomers and copolymers usable as electron injection material for LEDs)

IT Electroluminescent devices
 Electron affinity
 HOMO (molecular orbital)
 LUMO (molecular orbital)
 (prepn. and properties of triazine monomers and copolymers usable as electron injection material for LEDs)

IT Monomers
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
 (prepn. and properties of triazine monomers and copolymers usable as

- electron injection material for LEDs)**
- IT 26009-24-5, Poly(p-phenylenevinylene)
 RL: DEV (Device component use); USES (Uses)
 (LED layer; prepn. and properties of triazine monomers and copolymers usable as **electron injection material** for LEDs)
- IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (prepn. and properties of triazine monomers and copolymers usable as **electron injection material for LEDs)**
- IT 188788-79-6P 188788-80-9P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (prepn. and properties of triazine monomers and copolymers usable as **electron injection material for LEDs)**
- IT 157141-82-7 188788-62-7 188788-67-2 188788-74-1 188788-78-5
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
 (prepn. and properties of triazine monomers and copolymers usable as **electron injection material for LEDs)**
- IT 188788-56-9P 188788-60-5P 188788-63-8P 188788-65-0P 188788-68-3P
 188788-70-7P 188788-75-2P 188788-77-4P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and properties of triazine monomers and copolymers usable as **electron injection material for LEDs)**
- IT 26009-24-5, Poly(p-phenylenevinylene)
 RL: DEV (Device component use); USES (Uses)
 (LED layer; prepn. and properties of triazine monomers and copolymers usable as **electron injection material** for LEDs)
- RN 26009-24-5 CAPLUS
 CN Poly(1,4-phenylene-1,2-ethenediyl) (9CI) (CA INDEX NAME)



- IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (prepn. and properties of triazine monomers and copolymers usable as **electron injection material for LEDs)**
- RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6

Sn	x	7440-31-5
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L47 ANSWER 50 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:434604 CAPLUS

DOCUMENT NUMBER: 127:128468

TITLE: Organic/polymeric double-heterojunction light-emitting diodes

AUTHOR(S): Chen, Baijun; Huang, Jinsong; Hou, Jingying; Liu, Shiyong

CORPORATE SOURCE: Jilin Univ., Changchun, 130023, Peop. Rep. China

SOURCE: Bandaoti Guangdian (1997), 18(2), 110-112, 129

CODEN: BAGUES; ISSN: 1001-5868

PUBLISHER: Bandaoti Guangdian Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Double-heterojunction light-emitting diodes (LEDs) based on org . /polymeric thin layers were fabricated. The structure of the device is as follows: glass (substrate)/In - Sn - oxide (ITO)/PVK/Alq3/PBD/Alq3/Al in which the electrons and holes are resp. injected from the Al neg. electrode and ITO pos. electrode and transported through PVK and PBD layers, into Alq3 electroluminescent layer. Green light can be obsd. at forward bias voltage of 4 V, whereas max. brightness up to 3,000 cd/m2 can be achieved at forward bias voltage of 10 V with EL peak wavelength of 523 nm.

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST org polymeric double heterojunction LED; light emitting diode energy band

IT Band structure

Electroluminescent devices

(org. /polymeric double-heterojunction light-emitting diodes)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)

RL: DEV (Device component use); USES (Uses)

(Alq3; org. /polymeric double-heterojunction light-emitting diodes)

IT 15082-28-7

RL: DEV (Device component use); USES (Uses)

(PBD; org. /polymeric double-heterojunction light-emitting diodes)

IT 25067-59-8, PVK

RL: DEV (Device component use); USES (Uses)

(PVK; org. /polymeric double-heterojunction light-emitting diodes)

IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide

RL: DEV (Device component use); USES (Uses)

(org. /polymeric double-heterojunction light-emitting diodes)

IT 25067-59-8, PVK

RL: DEV (Device component use); USES (Uses)

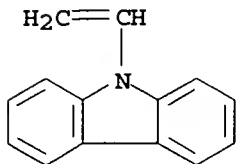
(PVK; org. /polymeric double-heterojunction light-emitting diodes)

RN 25067-59-8 CAPLUS

CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1484-13-5
CMF C14 H11 N



IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (org./polymeric double-heterojunction light-emitting diodes)
 RN 7429-90-5 CAPLUS
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====		
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 51 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:134287 CAPLUS

DOCUMENT NUMBER: 126:150294

TITLE: **Organic electroluminescent device** with high reliability and its manufacture

INVENTOR(S): Suzuki, Katsunori; Shiraishi, Yotaro; Kawakami, Haruo

PATENT ASSIGNEE(S): Fuji Electric Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08330072	A2	19961213	JP 1995-139021	19950606
PRIORITY APPLN. INFO.:			JP 1995-139021	19950606

KOROMA EIC1700

AB The device comprises laminated layers of a transparent elec. insulating substrate, an anode, an org. layer (which at least includes an emitting layer), and an Al-based cathode contg. sub-components of Si and an element of less work function than that of Al. The manufg. process, including flash deposition for cathode, is also claimed. The as-manufd. cathode with stable compn. in high through put.

IC ICM H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 56

ST electroluminescent device cathode flash deposition;
reliability electroluminescent device cathode manuf

IT Vapor deposition process
(chem., flash; org. electroluminescent device and its manuf.)

IT Electroluminescent devices
(org. electroluminescent device and its manuf.)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(anode; org. electroluminescent device and its manuf.)

IT 37356-22-2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cathode; org. electroluminescent device and its manuf.)

IT 138372-67-5
RL: DEV (Device component use); USES (Uses)
(electron-injecting layer; org. electroluminescent device and its manuf.)

IT 2085-33-8, Tris(8-quinolinolato)aluminum
RL: DEV (Device component use); USES (Uses)
(emitting layer; org. electroluminescent device and its manuf.)

IT 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl
RL: DEV (Device component use); USES (Uses)
(hole-injecting layer; org. electroluminescent device and its manuf.)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(anode; org. electroluminescent device and its manuf.)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====+=====+=====		

O		x		17778-80-2
In		x		7440-74-6
Sn		x		7440-31-5

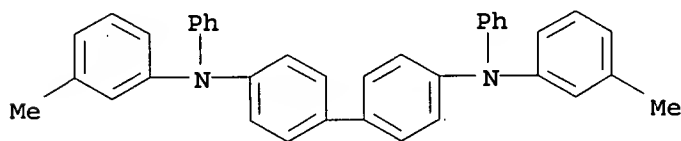
IT 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl

RL: DEV (Device component use); USES (Uses)

(hole-injecting layer; org.

electroluminescent device and its manuf.)

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

L47 ANSWER 52 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:749601 CAPLUS

DOCUMENT NUMBER: 126:149911

TITLE: Red electroluminescence from a thin organometallic layer of europium

AUTHOR(S): Campos, R. A.; Kovalev, I. P.; Guo, Y.; Wakili, N.; Skotheim, T.

CORPORATE SOURCE: Moltech Corp., Tucson, AZ, 85747, USA

SOURCE: Journal of Applied Physics (1996), 80(12), 7144-7150

CODEN: JAPIAU; ISSN: 0021-8979

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors study the performance of org.

electroluminescence devices employing a fluorinated diketone complex of Eu(ETP) as the emitter material. The architecture of the **devices** isolates the emitter from the **injecting** contacts by sandwiching a thin **layer** of ETP between a **hole-transporting diamine layer** and an **electron**-transporting Al complex **layer**. The **org.**

layers are deposited in high vacuum with rate-controlled sources onto **glass** substrates coated with In-Sn-oxide, and the cell is completed by evapn. of Al or Ca-Al cathodes. By varying the thickness of ETP **layer** in increments of 6 .ANG. the authors demonstrate spatial confinement of the **electroluminescence** emission zone and optimal performance for an ETP thickness of 50 .ANG.. Both the optical and elec. characteristics of these cells follow steep power-law relations with voltage, which are indicative of trap-modified, space-charge-limited conduction. With Al cathodes the authors routinely achieve luminance up to 10 cd/m² with d.c. densities near 40 mA/cm². The **electroluminescence** has a red-orange color and exhibits a narrow

spectrum that is characteristic of trivalent Eu ions.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescence** europium phenanthroline fluoro thienylbutane dionate; LED europium phenanthroline fluoro thienylbutane dionate; current voltage LED europium organometallic

IT Electric current-potential relationship

Electroluminescent devices

Luminescence

Luminescence, electroluminescence

Space charge

Trapping

(red **electroluminescence** from a thin organometallic layer of europium with **luminescence** and application as LED)

IT 2085-33-8, Hydroxyquinoline aluminum 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50926-11-9, ITO

65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine

RL: DEV (Device component use); USES (Uses)

(red **electroluminescence** from a thin organometallic layer of europium with **luminescence** and application as LED)

IT 17904-86-8

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(red **electroluminescence** from a thin organometallic layer of europium with **luminescence** and application as LED)

IT 95-50-1, o-Dichlorobenzene 531-91-9, N,N'-Diphenylbenzidine 584-08-7, Potassium carbonate 625-95-6, 3-Iodotoluene 7440-50-8, Copper, processes 17455-13-9, 18-Crown-6

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(red **electroluminescence** from a thin organometallic layer of europium with **luminescence** and application as LED)

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50926-11-9, ITO 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine

RL: DEV (Device component use); USES (Uses)

(red **electroluminescence** from a thin organometallic layer of europium with **luminescence** and application as LED)

RN 7429-90-5 CAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7440-70-2 CAPLUS

CN Calcium (8CI, 9CI) (CA INDEX NAME)

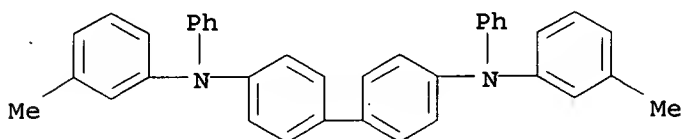
Ca

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

IT 7440-50-8, Copper, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(red **electroluminescence** from a thin organometallic
layer of europium with **luminescence** and application
as LED)

RN 7440-50-8 CAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

L47 ANSWER 53 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:672492 CAPLUS

DOCUMENT NUMBER: 125:312004

TITLE: Manufacture of multicolor **electroluminescent devices**

INVENTOR(S): Matsura, Masahide; Sakaeda, Noboru; Hosokawa, Chishio

PATENT ASSIGNEE(S): Idemitsu Kosan Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

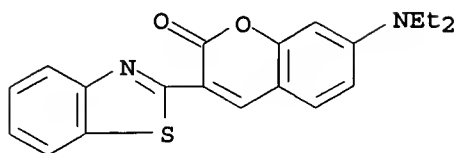
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

KOROMA EIC1700

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 08213171	A2	19960820	JP 1995-21708	19950209
PRIORITY APPLN. INFO.:				JP 1995-21708	19950209
AB	The manufg. process comprises the steps of: forming, on a glass substrate, an ITO electrode, a hole-transporting layer , an electron-transporting phosphor layer , and an electron-injecting electrode; etching the glass substrate using an aq. etchant contg. HF and NH ₄ F; and forming a color-converting multistripe layer on the etched surface by vapor deposition.				
IC	ICM H05B033-14				
	ICS H05B033-04				
ICA	C09K011-06				
CC	73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				
ST	electroluminescent org phosphor color converter manuf				
IT	Electroluminescent devices Phosphors (manuf. of multicolor electroluminescent devices)				
IT	Polyesters, uses RL: DEV (Device component use); USES (Uses) (uses; manuf. of multicolor electroluminescent devices)				
IT	Glass, oxide RL: DEV (Device component use); USES (Uses) (barium aluminoborosilicate, manuf. of multicolor electroluminescent devices)				
IT	2085-33-8, Tris(8-quinolinolato)aluminum 4061-32-9 37271-44-6 38215-36-0, Coumarin 6 50926-11-9, ITO 51325-91-8, 4-Dicyanomethylene-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine RL: DEV (Device component use); USES (Uses) (manuf. of multicolor electroluminescent devices)				
IT	7664-39-3, Hydrogen fluoride, reactions 12125-01-8, Ammonium fluoride (NH ₄ F) RL: RCT (Reactant); RACT (Reactant or reagent) (manuf. of multicolor electroluminescent devices)				
IT	38215-36-0, Coumarin 6 50926-11-9, ITO 51325-91-8, 4-Dicyanomethylene-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine RL: DEV (Device component use); USES (Uses) (manuf. of multicolor electroluminescent devices)				
RN	38215-36-0 CAPLUS				
CN	2H-1-Benzopyran-2-one, 3-(2-benzothiazolyl)-7-(diethylamino)- (9CI) (CA INDEX NAME)				



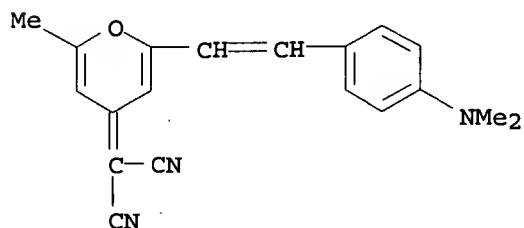
RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

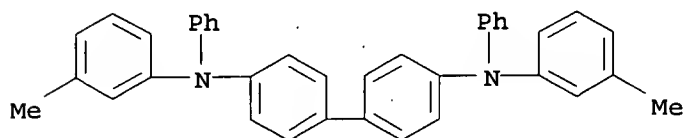
RN 51325-91-8 CAPLUS

CN Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]- (9CI) (CA INDEX NAME)



RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



L47 ANSWER 54 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:431667 CAPLUS

DOCUMENT NUMBER: 125:99558

TITLE: **Electroluminescent devices**

INVENTOR(S): Takeda, Kazuya; Matsumoto, Toshio; Mizukami, Tokio;
Kuwabara, Akio

PATENT ASSIGNEE(S): Ibm Japan, Japan; Aimesu Kk

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08124679	A2	19960517	JP 1994-260391	19941025
PRIORITY APPLN. INFO.:			JP 1994-260391	19941025

AB The devices comprise: a glass substrate; a light-reflecting Au film; an electron-injecting cathode layer using Ca, Li or Mg; a phosphor layer consisting of tris(8-quinolinolato)aluminum; a hole-transporting layer employing N,N'-diphenyl-N,N'-bis(3-methyl-phenyl)-1,1'-biphenyl-4,4'-diamine; and a hole injection polyaniline anode layer.

IC ICM H05B033-26
 ICS H05B033-04

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST electroluminescent Alq TPD PANI org device

IT Electroluminescent devices
 (electroluminescent Alq TPD PANI org device
)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-57-5, Gold, uses 7440-70-2, Calcium, uses 25233-30-1, Polyaniline 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methyl-phenyl)-1,1'-biphenyl-4,4'-diamine
 RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices)

IT 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-57-5, Gold, uses 7440-70-2, Calcium, uses 25233-30-1, Polyaniline 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methyl-phenyl)-1,1'-biphenyl-4,4'-diamine
 RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices)

RN 7439-93-2 CAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7439-95-4 CAPLUS
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-57-5 CAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-70-2 CAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

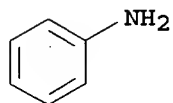
Ca

RN 25233-30-1 CAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

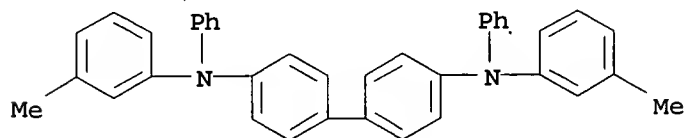
CM 1

CRN 62-53-3

CMF C6 H7 N



RN 65181-78-4 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



L47 ANSWER 55 OF 58 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:703509 CAPLUS
DOCUMENT NUMBER: 123:97438
TITLE: **Organic thin film electroluminescent devices**
INVENTOR(S): Nabeta, Osamu; Shiraishi, Yotaro
PATENT ASSIGNEE(S): Fuji Electric Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF

KOROMA EIC1700

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07130468	A2	19950519	JP 1993-271083	19931029
PRIORITY APPLN. INFO.:			JP 1993-271083	19931029

AB The EL devices consist of a transparent laminate (insulating substrate-cathode-amorphous C layer), an org. light-emitting layer, and an anode. The cathode may comprise ITO. The amorphous C layer may be 10-100 nm thick. The EL devices may have an org. hole-injection layer between the amorphous C layer of the transparent laminate and the light-emitting layer and an electron-injection layer between the light-emitting layer and the anode. The EL devices show good luminescent efficiency and stability.

IC ICM H05B033-14
 ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST electroluminescent cathode amorphous carbon coating

IT Electroluminescent devices
 (org. electroluminescent devices with amorphous carbon coating on cathode)

IT 7440-44-0, Carbon, uses
 RL: DEV (Device component use); USES (Uses)
 (amorphous; org. electroluminescent devices with amorphous carbon coating on cathode)

IT 2455-14-3
 RL: DEV (Device component use); USES (Uses)
 (electron-injection layer; org. electroluminescent devices with amorphous carbon coating on cathode)

IT 65181-78-4
 RL: DEV (Device component use); USES (Uses)
 (hole-injection layer; org. electroluminescent devices with amorphous carbon coating on cathode).

IT 2085-33-8
 RL: DEV (Device component use); USES (Uses)
 (light-emitting layer; org. electroluminescent devices with amorphous carbon coating on cathode)

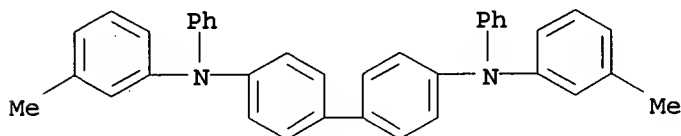
IT 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (org. electroluminescent devices with amorphous carbon coating on cathode)

IT 65181-78-4
 RL: DEV (Device component use); USES (Uses)

(hole-injection layer; org.
electroluminescent devices with amorphous carbon
coating on cathode)

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



IT 50926-11-9, Indium tin oxide

RL: DEV (Device component use); USES (Uses)
(org. electroluminescent devices with
amorphous carbon coating on cathode)

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 56 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:529706 CAPLUS

DOCUMENT NUMBER: 122:325870

TITLE: Synthesis of triphenylamine-containing
poly(methacrylamide) and its application to
organic electroluminescent
devices

AUTHOR(S): Kido, Junji; Harada, Gaku; Nagai, Katsutoshi

CORPORATE SOURCE: Dep. Mater. Sci. Eng., Yamagata Univ., Yonezawa, 992,
Japan

SOURCE: Kobunshi Ronbunshu (1995), 52(4), 216-20
CODEN: KBRBA3; ISSN: 0386-2186

PUBLISHER: Kobunshi Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Triphenylamine-contg. poly(methacrylamide) (PTPAMA) was synthesized and
used as a hole transport layer in an org.
electroluminescent (EL) device. Using an
electron-transporting Al complex (Alq) as an emitter layer
, double-layer-type EL devices were
fabricated. A cell structure of glass substrate/In-Sn-
oxide/PTPAMA/Alq/Mg/Ag was employed. Hole injection

from the electrode through the PTPAMA layer to the Alq layer and concomitant electroluminescence from the Alq layer were obsd. Bright green luminescence with a luminance of 9,000 cd/m2 was achieved at a drive voltage of 12V.

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST LED triphenylamine polymethacrylamide.

IT Electroluminescent devices

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

IT 2085-33-8, Hydroxyquinoline aluminum 7439-95-4, Magnesium, uses 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

IT 7440-22-4, Silver, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

IT 163684-76-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

IT 78-67-1 2350-01-8 163684-75-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

IT 7439-95-4, Magnesium, uses 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)

(synthesis of triphenylamine-contg. poly(methacrylamide) and application to org. electroluminescent devices)

RN 7439-95-4 CAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 50926-11-9 CAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

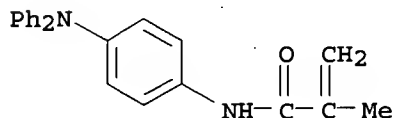
Component	Ratio	Component Registry Number
=====+=====+=====		

O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 7440-22-4, Silver, uses
 RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)
 (synthesis of triphenylamine-contg. poly(methacrylamide) and
 application to org. electroluminescent
 devices)
 RN 7440-22-4 CAPLUS
 CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

IT 163684-76-2P
 RL: DEV (Device component use); SPN (Synthetic preparation);
 PREP (Preparation); USES (Uses)
 (synthesis of triphenylamine-contg. poly(methacrylamide) and
 application to org. electroluminescent
 devices)
 RN 163684-76-2 CAPLUS
 CN 2-Propenamide, N-[4-(diphenylamino)phenyl]-2-methyl-, homopolymer (9CI)
 (CA INDEX NAME)
 CM 1
 CRN 163684-75-1
 CMF C22 H20 N2 O



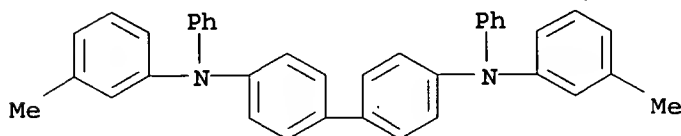
L47 ANSWER 57 OF 58 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1994:256942 CAPLUS
 DOCUMENT NUMBER: 120:256942
 TITLE: Progress in organic multilayer
 electroluminescent devices
 AUTHOR(S): Saito, Shogo; Tsutsui, Tetsuo; Era, Masanao; Takada,
 Noriyuki; Adachi, Chihaya; Hamada, Yuji; Wakimoto,
 Takeo
 CORPORATE SOURCE: Dep. Mater. Sci. Technol., Kyushu Univ., Kasuga, 816,
 Japan
 SOURCE: Proceedings of SPIE-The International Society for
 Optical Engineering (1993), 1910(Electroluminescent

KOROMA EIC1700

Materials, Devices, and Large-Screen Displays), 212-21
CODEN: PSISDG; ISSN: 0277-786X

DOCUMENT TYPE: Journal
LANGUAGE: English

- AB Survey of dye materials for the emission layer in the multilayer
org. electroluminescent (EL) device
is discussed in terms of emission color and fluorescent efficiency.
Org. semiconductors for the electron or the hole
transport layer in the EL device are
proposed for prep. stable homogeneous thin layer. Requirement
of accomplishing the confinement of the singlet excitons generated by the
recombinations of injected electrons and holes
is discussed by using three layer EL devices
with extremely thin bimol. emission layer. Then the emphasis is
laid on the size effects in three layer EL
device with double heterojunctions on the spontaneous emission.
Variations of the intensity and pattern of outer emission through
semitransparent ITO glass substrate with the spacing between the
emission layer and the metallic electrode are discussed theor.
and exptl. And variation of the fluorescent lifetime or the radiative
decay rate with the spacing is also discussed theor. and exptl.
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
- ST org multilayer electroluminescent device
- IT Electroluminescent devices
(org., multilayer)
- IT Exciton
(singlet, confinement of, in org. multilayer
electroluminescent devices)
- IT 15082-28-7 33628-03-4 65181-78-4 91175-19-8 138372-63-1
138372-64-2 138372-65-3 138372-66-4 138372-67-5 138372-68-6
138372-69-7 138372-70-0 138395-31-0 138395-32-1
RL: USES (Uses)
(electroluminescent device from multilayer contg.)
- IT 50926-11-9, Indium tin oxide
RL: USES (Uses)
(inorg. multilayer electroluminescent device)
- IT 65181-78-4
RL: USES (Uses)
(electroluminescent device from multilayer contg.)
- RN 65181-78-4 CAPLUS
- CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



IT 50926-11-9, Indium tin oxide
 RL: USES (Uses)
 (inorg. multilayer **electroluminescent device**)
 RN 50926-11-9 CAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L47 ANSWER 58 OF 58 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1988:429797 CAPLUS

DOCUMENT NUMBER: 109:29797

TITLE: **Organic electroluminescent device with a three-layer structure**

AUTHOR(S): Adachi, Chihaya; Tokito, Shizuo; Tsutsui, Tetsuo; Saito, Shogo

CORPORATE SOURCE: Grad. Sch. Eng. Sci., Kyushu Univ., Kasuga, 816, Japan

SOURCE: Japanese Journal of Applied Physics, Part 2: Letters (1988), 27(4), L713-L715

CODEN: JAPLD8

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An **electroluminescent (EL) device** with a 3-layer structure was constructed using an intensely fluorescent material, 12-phthaloperinone deriv., for the emitter material. The cell structure in Mg/electrode/amorphous **electron-transport layer**/polycryst. emitting **layer**/amorphous **hole -transport layer**/Au-electrode was constructed on a **glass** substrate. Yellow **EL** emission was obsd. in normal room lighting at the d.c. bias voltage of 60 V. The emission intensity was proportional to the **injection** current over current range of 10^{-7} - 10^{-3} A/cm². The **EL** intensity was $>1 \mu\text{W}/\text{cm}^2$ at the **injection** current of 2 mA/cm².

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22

ST phthaloperinone deriv **electroluminescent device**;
luminescence electro phthaloperinone deriv;
electroluminescence phthaloperinone deriv

IT Fluorescence
Luminescence, electro-
 (of phthaloperinone deriv.)

IT **Electroluminescent devices**
 (org., with three-layer structure)

IT 7439-95-4, Magnesium, uses and miscellaneous 7440-57-5,
 Gold, uses and miscellaneous 55034-81-6 65181-78-4
 114992-97-1

RL: DEV (Device component use); USES (Uses)
(electroluminescent device contg.)

IT 7439-95-4, Magnesium, uses and miscellaneous 7440-57-5,
Gold, uses and miscellaneous 65181-78-4

RL: DEV (Device component use); USES (Uses)
(electroluminescent device contg.)

RN 7439-95-4 CAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-57-5 CAPLUS

CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 65181-78-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

